



GPZ8000™

User Manual



GPZ 8000™ by Minelab

The GPZ 8000™ is Minelab's most advanced gold detector, built around the next generation of ZVT™ technology, GeoZVT™, and the all-new Z-Set toroidal coil system designed to deliver greater depth in all soil conditions. These coils provide significantly improved depth compared to traditional DDD or DD coils and avoid soil saturation effects that can limit performance in mineralized ground. As a result, the GPZ 8000™ excels in deep, weathered soils, while maintaining strong performance across a wide range of ground types.

The GPZ 8000™ also introduces Echo-Sonic Pro™ Audio (ESP™), delivering stereo audio through the supplied high-fidelity Sennheiser® HD 505 wired audiophile headphones to help you hear the faintest target signals more clearly and better understand changing ground conditions. Combined with a lighter, better-balanced design than its predecessor, the GPZ 8000™ offers exceptional depth capability, clarity, and ease of use for serious gold prospecting.

⚠ IMPORTANT SAFETY INFORMATION

Before assembling, charging, or using your detector, read the warnings and safety information in the following sections:

- ▶ [Safety, Care & Maintenance \(page 60\)](#)
- ▶ [Batteries and Charging \(page 17\)](#)



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Quick Start



Before first use, fully charge the detector battery [\[page 17\]](#). This takes approximately 4 hours.



Starting in factory default settings is recommended. The default settings are a practical choice if you want to begin successfully detecting without the need to manually adjust detector settings. See [Factory Reset on page 65](#).

1

TURN ON

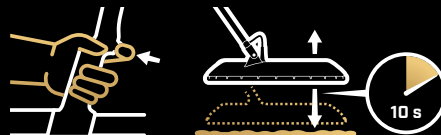
Press the power button on the control pod.



2

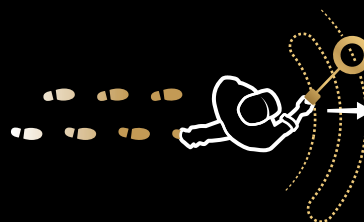
QUICK-TRAK

Press and hold the Quick-Trak button, then raise and lower the coil over the ground for 10 seconds.



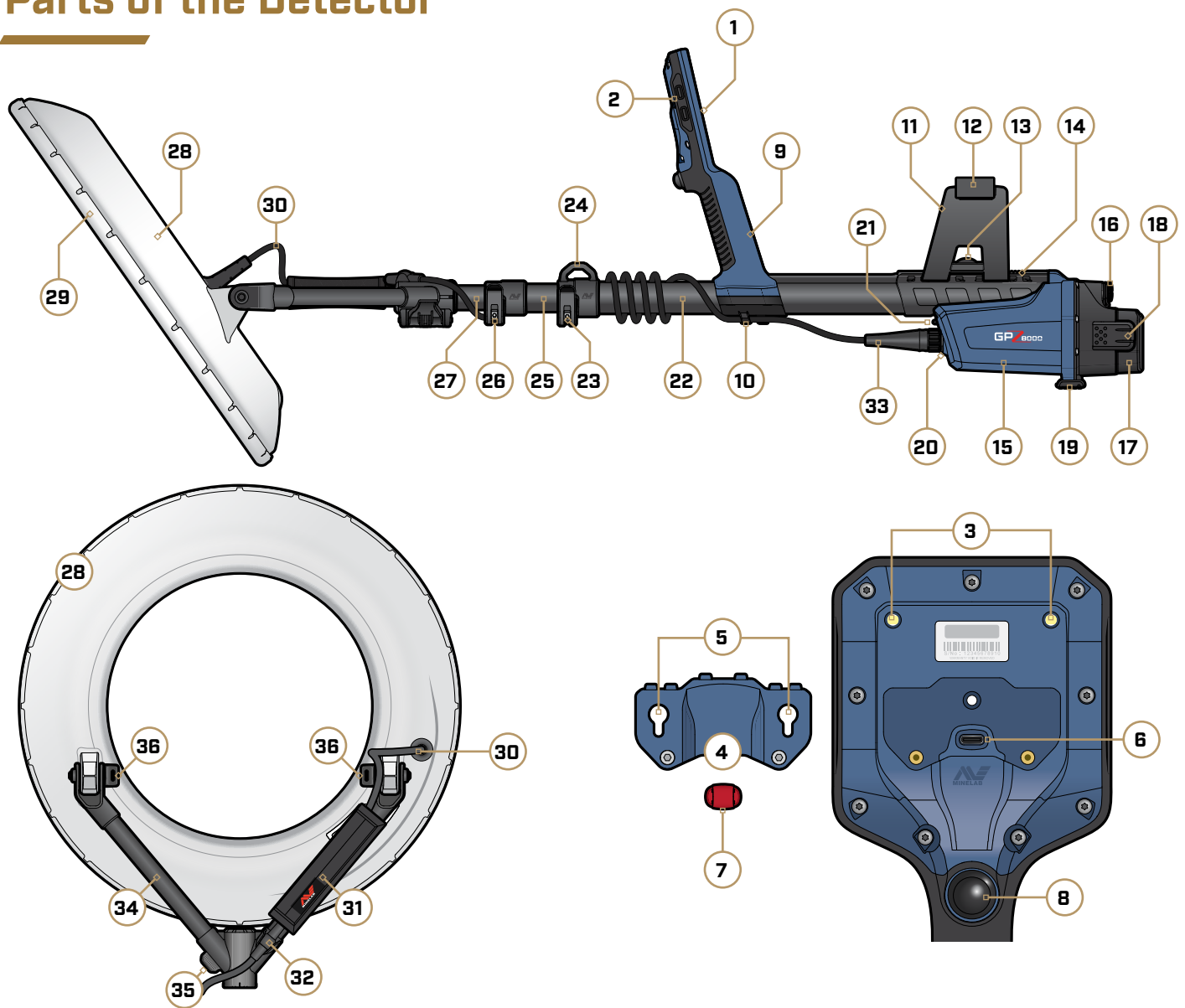
3

BEGIN DETECTING



Parts, Assembly & Setup

Parts of the Detector



CONTROL POD ASSEMBLY

1. Display and keypad
2. Side buttons (×4)
3. Dual-LED flashlight
4. Removable cover and screws
5. Bungee loop attachment point (×2)
6. USB-C port (data only)
7. USB-C bung
8. Quick-Trak button
9. Handgrip
10. Cable hooks

ARMREST ASSEMBLY

11. Armrest
12. Armstrap
13. Armrest lock
14. Armrest rail

CONTROL BOX ASSEMBLY

15. Control box
16. Headphone socket 3.5 mm (1/8") with waterproof dust cap
17. Battery pack
18. Battery latches (×2)
19. Stand
20. Coil connector socket
21. Control box latch

SHAFTS

22. Upper shaft
23. Upper camlock
24. PRO-SWING™ bungee attachment point
25. Middle shaft
26. Middle camlock
27. Lower shaft

COIL ASSEMBLY

28. Coil
29. Skid plate
30. Coil cable
31. Cable wrap
32. Cable retainer & socket
33. Coil connector
34. Yoke
35. Coil camlock
36. Coil bolt (×2)

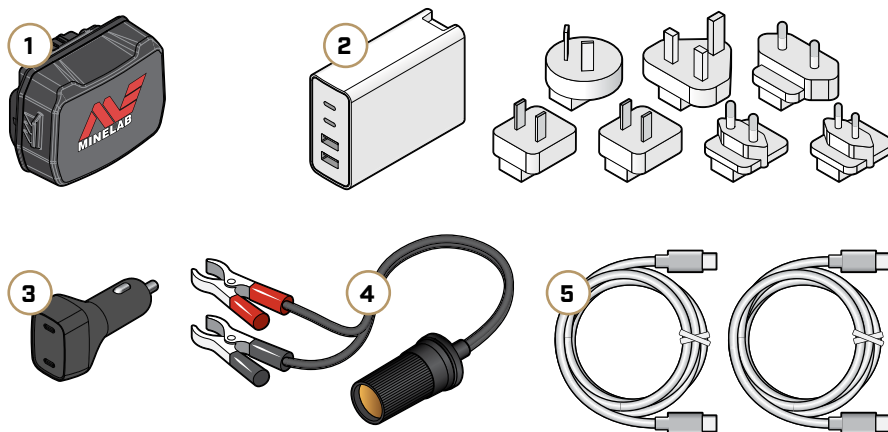


Some parts require periodic maintenance and care. Carefully read and follow all instructions listed in [Maintenance of Parts](#) on page 62 before using the detector or carrying out cleaning or maintenance on any parts.

Accessories

POWER ACCESSORIES

1. Spare detector battery
2. Universal AC charger with 2× USB-C and 2× USB-A ports
3. USB-C DC car charger with 2× USB-C ports
4. Crocodile clip adapter accessory socket-to-crocodile clip for direct 12 V vehicle battery connection
5. USB-C to USB-C charging cables (×2)



AUDIO ACCESSORIES

6. Sennheiser® HD 505 wired headphones with hard case and drawstring bag
7. Minelab auxiliary audio cable 3.5 mm (1/8") to 2.5 mm (3/32")
8. Standard auxiliary audio cable 3.5 mm (1/8") to 2.5 mm (3/32")
9. WM 14 Wireless Audio Module
10. Headphone jack adapter 3.5 mm (1/8") to 6.35 mm (1/4")



Z-SET COILS

11. Z18 18-inch coil
12. Z17 17-inch coil*
13. Z13 13-inch coil*

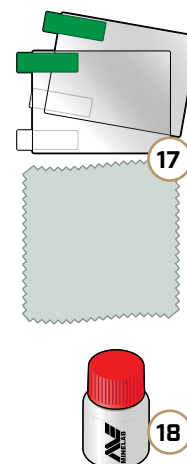
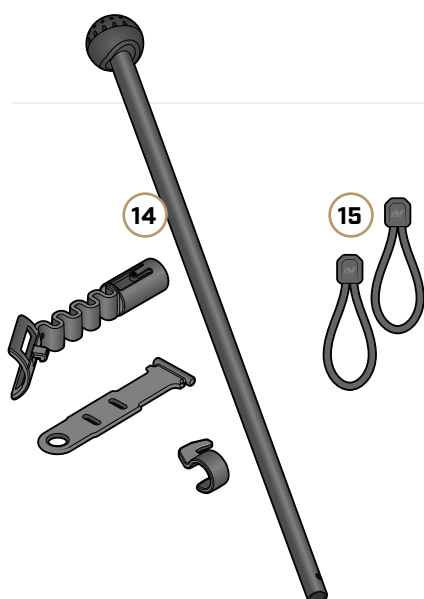
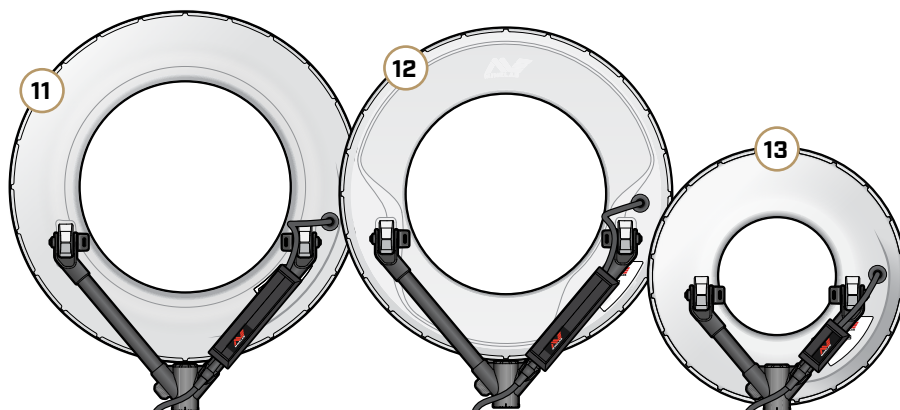
* Included in the three coil pack out only

ERGONOMIC ACCESSORIES

14. GA 10 guide arm
15. Bungee loops (×2)
16. PRO-SWING™ 125 harness

ADDITIONAL ACCESSORIES

17. Screen protector kit
18. Specimen container



GPZ 8000™

GPZ 8000™ ASSEMBLY

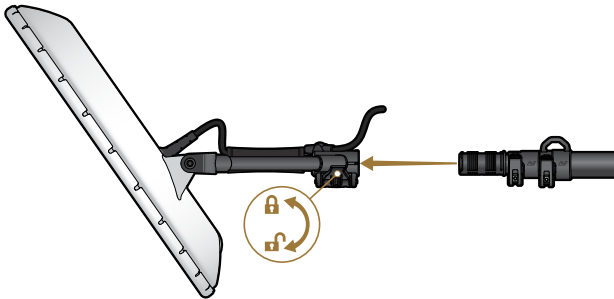
Attach the Coil

1. Open the coil camlock and slide the coil assembly and lower shaft together.

The coil can be attached in the regular detecting position as shown, or rotated 90 degrees to the left or right before sliding onto the lower shaft. This can make the detector more compact for storage, or easier to detect in tight spaces and on vertical surfaces.

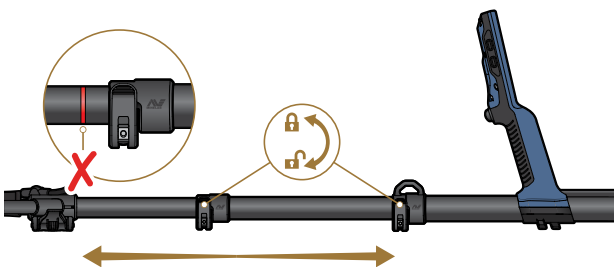
2. Close the coil camlock.

CAUTION: Pinch hazard. Keep fingers clear when attaching the coil. Pinching may occur when closing the coil camlock.



Extend the Shafts

1. Open the upper and lower camlocks.
2. Extend the shafts to their approximate detecting length. Do not extend beyond the red line.
3. Close the camlocks.

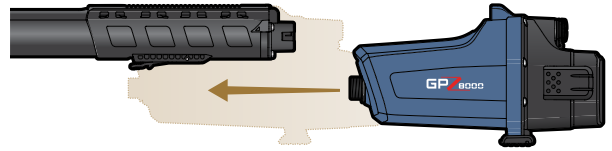


CAUTION: Pinch hazard. Keep fingers clear when adjusting the lower shaft. Pinching may occur between the lower shaft and coil assembly.

i If the shafts are slipping, they can be adjusted — see [Tightening the Camlocks](#) [page 62].

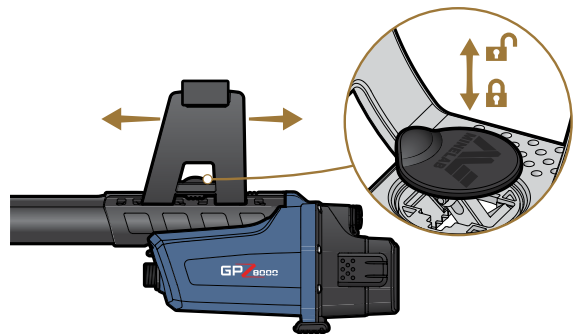
Attach the Control Box

1. Slide the control box onto the underside of the armrest rail until it clicks/locks into place.



Attach the Armrest

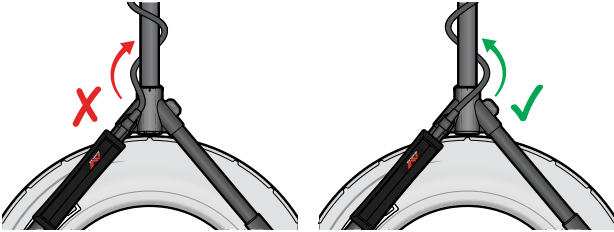
1. Unlock the armrest.
2. Slide the armrest onto the armrest rail.
3. Insert your arm into the armrest to check that the position is correct and adjust until it is comfortable — the armrest should be positioned just below your elbow. Make sure both the front and the back of the armrest are engaging the rail, then lock the armrest.



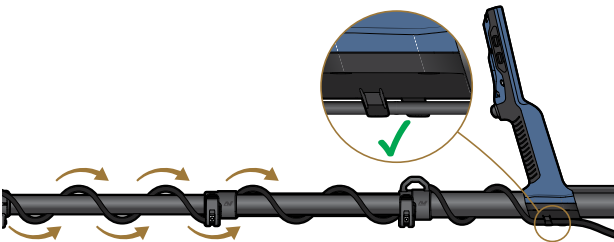
i If you are left-handed, you can reverse the armrest strap so that it fastens away from your body.

Connect the Coil

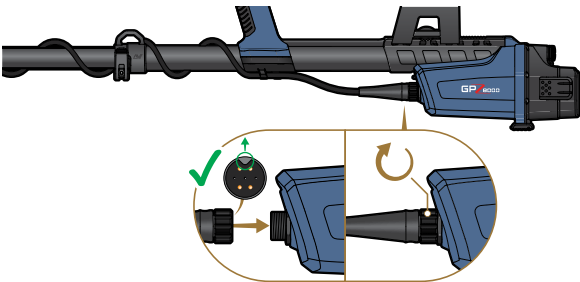
1. Confirm that the cable retainer is clipped into the socket, then route the cable over the top of the bottom shaft toward the left side of the detector.



2. Wrap the coil cable around the shafts enough times to take up the slack, but so the coil can still tilt without restriction. Route the cable through the cable hooks underneath the handgrip.



3. With the arrow on the coil connector at the top, align the connector with the interface on the front of the control box. Plug-in and firmly tighten the retaining ring.



NOTICE: Always check that the coil connector is dry and free of grit and dust before connecting to the detector.

NOTICE: Do not use tools to tighten the coil connector to the control box, this will damage the control box. If the coil connector is not fitting easily, clean any dirt/grit away before trying again.

NOTICE: Ensure the coil cable is kept in good condition, free of strain, kinks, and tight bends.

Connect Audio

The GPZ 8000™ does not have a built-in speaker. To hear audio, connect the supplied Sennheiser® HD 505 wired headphones directly to the detector, or use the WM 14 Wireless Audio Module. See the following sections for more information:

- [Wired Headphones \(page 19\)](#)
- [WM 14 Wireless Audio Module \(page 20\)](#)

SCREEN PROTECTOR APPLICATION

1. Remove the thin plastic film from the detector screen. Use the supplied microfiber cloth to clean the screen, making sure it is free of dust and fingerprints.
2. Peel the red **STEP 1** label from the screen protector to remove the backing layer — take care not to touch the adhesive side.
3. Hold the edges of the screen protector, align it to the screen, and apply gently.
4. Wipe any bubbles to the edge with a soft, clean cloth.
5. Remove the front layer labeled **STEP 2**.

Coils

GPZ 8000™ Z-SET COIL CHARACTERISTICS

Understanding when to use each coil will increase the productivity of your detecting sessions. The GPZ 8000™ is supplied with a versatile Z18 coil or the complete set [Z18, Z13, or Z17] depending on product configuration.

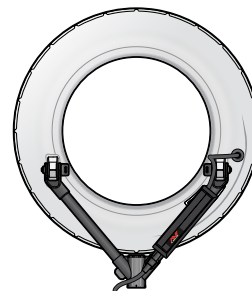
Z18

A sensitive coil for large deep gold and maximum ground coverage.

Whenever you begin detecting somewhere new or in deep soils, start with this coil first.

The Z18 coil is designed for general and deep-hunting ground, with a clear focus on medium to deep targets. It provides the best depth of the three coils, ideal for reaching deeper gold, particularly in open areas where coverage and depth are prioritized.

While the Z18 offers maximum depth for deep gold, it is more affected by EMI than the Z13. The largest of the coils, it is less suited to dense vegetation or interference-heavy areas, but is a strong choice when conditions allow, and deep targets are the primary goal.



EMI Handling



Conductivity Handling



Depth



Maneuverability



Gold Size Ability



Z13

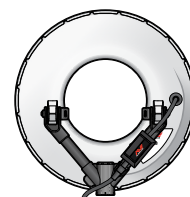
A compact and maneuverable coil ideal for small-medium gold.

In shallow soils, or if ground conditions get too challenging for the Z18, change to the Z13.

The Z13 coil is well suited to mild conductivity soil and performs well on small to medium gold. It offers good depth for its size, making it a reliable choice when working in environments that are relatively forgiving but still variable.

It handles EMI better than the Z18, giving more stable operation when interference is present. This makes it a practical option when you want controlled, stable detecting rather than maximum depth.

As the smallest of the three coils, it is the most maneuverable, great for detecting among vegetation, around obstacles and in tight spaces, while also minimizing fatigue.



EMI Handling



Conductivity Handling



Depth



Maneuverability



Gold Size Ability



Z17

The perfect all-rounder, excels at handling high levels of EMI and ground conductivity.

If ground conditions and EMI are too severe for the Z18 and Z13, change to the Z17.

The Z17 coil is optimized for highly conductive soils and performs strongly on small and medium targets. It delivers good depth without sacrificing too much performance, making it a versatile coil across a wide range of ground conditions.

With excellent EMI handling, the Z17 provides the best stability in high EMI environments. It is suitable for most detecting situations, especially where environmental conditions are highly variable.



EMI Handling



Conductivity Handling



Depth



Maneuverability

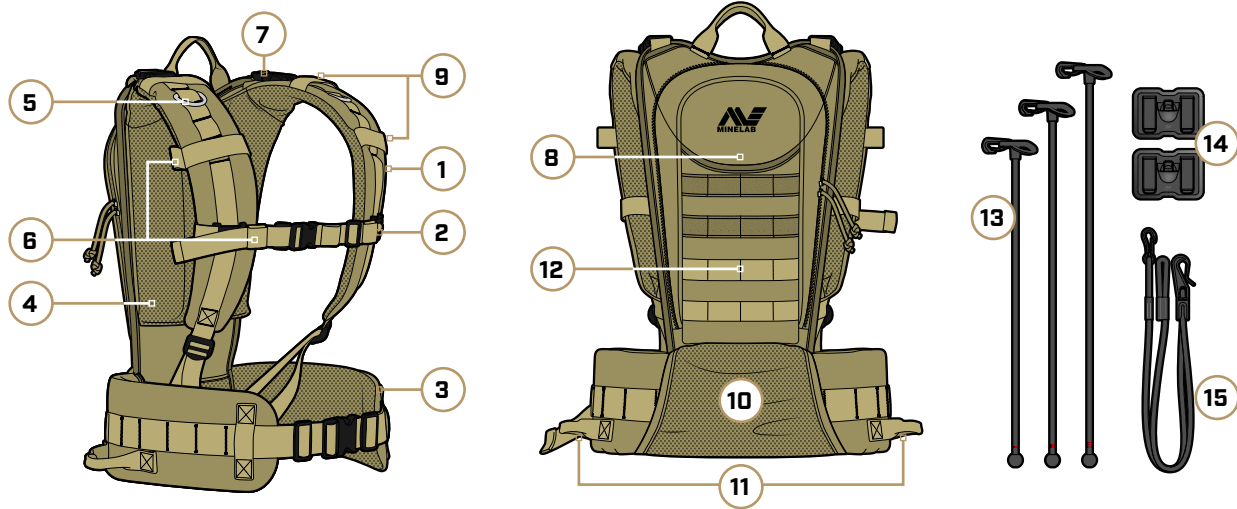


Gold Size Ability



PRO-SWING™ 125 Harness

PARTS OF THE HARNESS



PRO-SWING™ 125 HARNESS

1. Shoulder straps
2. Chest strap (adjustable)
3. Hip belt (adjustable)
4. Back panel (adjustable)
5. D-rings (adjustable)
6. Elastic loops
on each side for routing optional hydration tube
7. Shoulder stabilizer straps (adjustable)
8. Hydration reservoir compartment

ATTACHMENT POINTS

9. WM 14 attachment points (×4)
10. Air-mesh pocket
11. Webbing loops (×2)
12. MOLLE (PALS)-compatible webbing

PRO-SWING™ 125 ACCESSORIES

13. Hip-strut (×3 lengths)
425 mm (17"), 475 mm (19"), 525 mm (21")
14. Hip-socket (×2)
15. Bungee cord with hook

PRO-SWING™ 125 ASSEMBLY

Using the PRO-SWING™ 125 harness significantly reduces fatigue during detecting sessions. Taking time to fit the harness correctly is important for comfort and effective weight distribution.

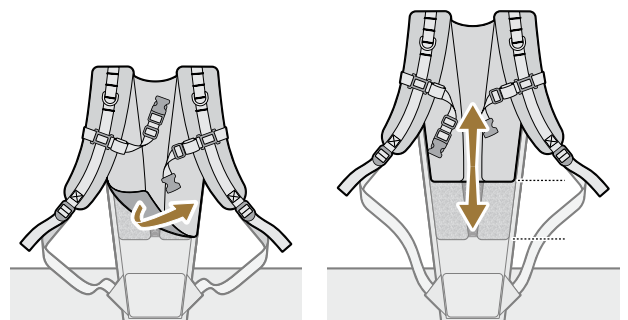
The assembly steps illustrate the initial harness setup. Additional adjustments may be needed once you begin detecting to achieve the ideal fit.



The steps shown can be carried out on the left or right side of the harness to suit the user's preference. The steps illustrate assembly for right-handed use of the detector.

Adjust the Back Panel

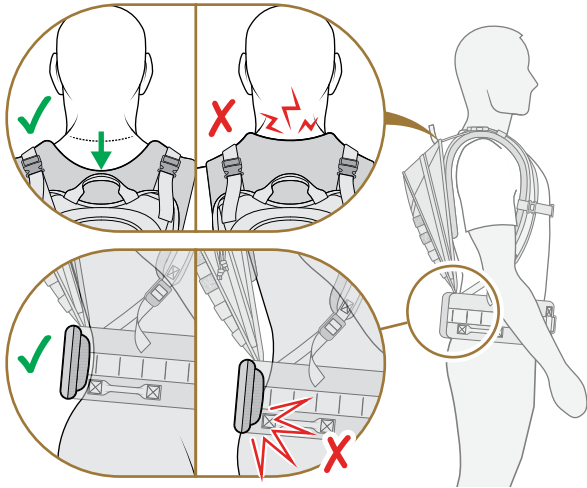
1. Peel the back panel away from the harness and adjust it to the correct length. Press down firmly on it to fix the position.



PRO-SWING™ 125 Harness *[continued]*

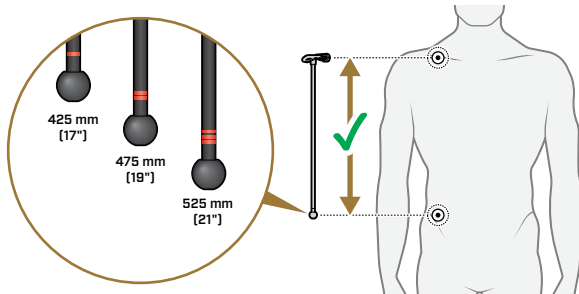
2. Check the fit. When fitted correctly, the back panel should sit comfortably just below the base of your neck and allow you to tilt your head all the way up without digging in.

The hip belt should sit on your hips with the lumbar cushion comfortably in your lower back.



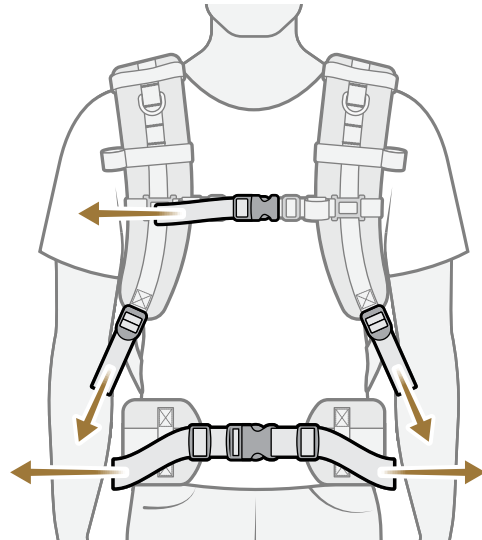
Select the Hip-strut Length

1. Select a hip-strut that fits approximately from your collarbone to your hipbone.



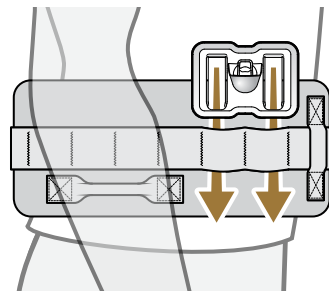
Clip on the Harness and Adjust Straps

1. Put the harness on.
2. Tighten the hip belt snugly so most of the weight sits on your hips, not on your waist.
3. Fasten and adjust the chest strap. Buckle it across your chest. Tighten firmly but comfortably.
4. Tighten the shoulder straps. Pull down evenly until the straps sit comfortably against your shoulders.



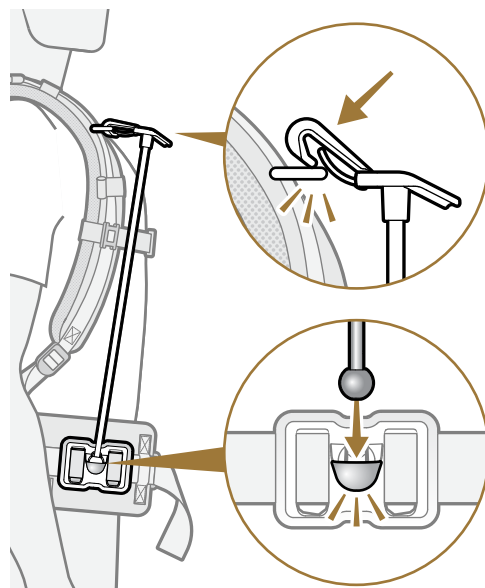
Attach the Hip-socket

1. Attach the hip-socket to the hip belt webbing on the same side that you hold your detector, so that the socket is roughly centered on your hip bone.



Connect the Hip-strut

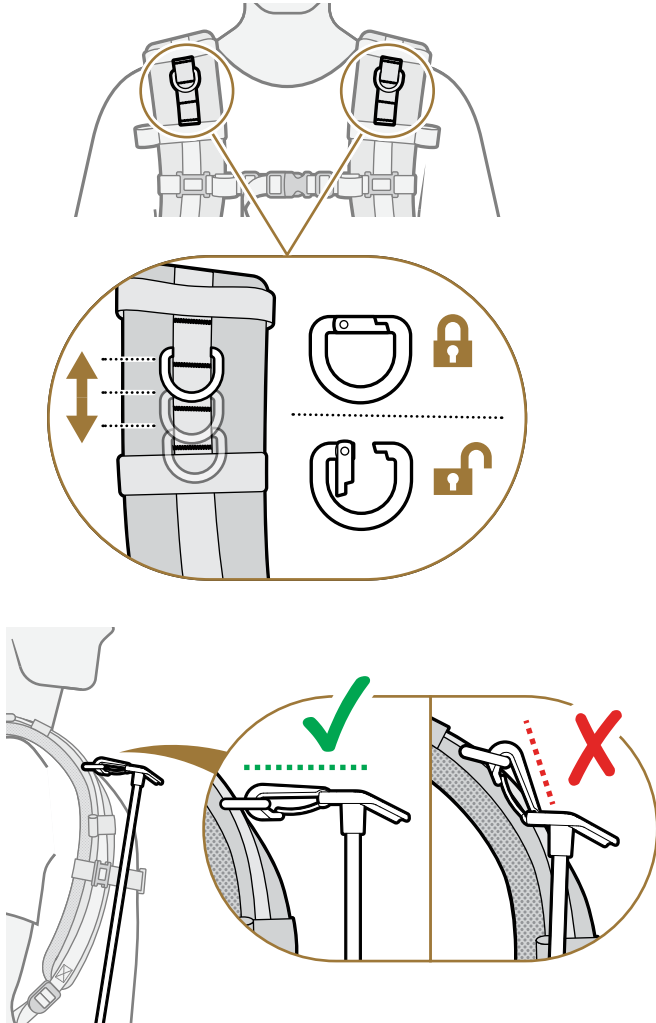
1. Snap the ball on the hip-strut into the socket then clip the hip-strut onto the D-ring on the arm strap on the same side as the socket.



PRO-SWING™ 125 Harness *[continued]*

Adjust the D-ring Position

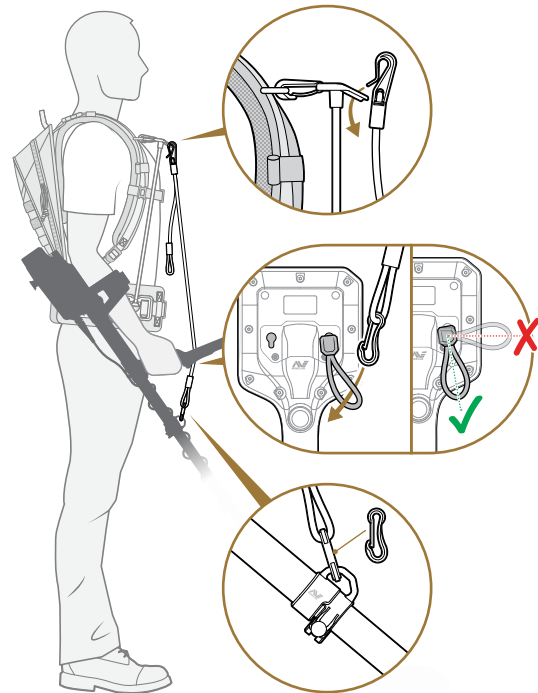
1. Adjust the position of the D-ring so that the hip-strut hook is horizontal.



Connect to the Detector

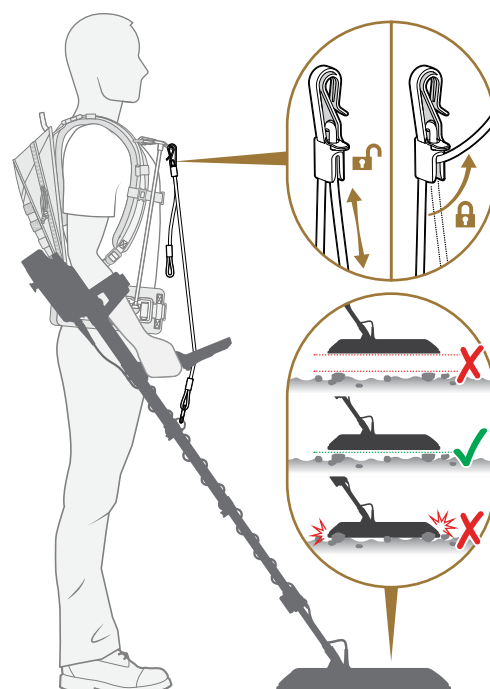
1. Clip one of the supplied bungee loops into the attachment point on the back of the control pod, on the same side that you will hold the detector.
Route the other end of the bungee through the bungee loop on the control pod. The bungee loop must hang toward the bottom of the pod, not towards the side.
2. Clip it onto the bungee attachment point on the detector.
3. Clip the hook end of the bungee onto the hip-strut.

 The hip-strut hook may no longer be horizontal once the bungee cord is attached due to the load from the detector. Readjust the position of the D-ring if required.



Adjust the Load

1. Stand in a natural detecting position while holding the detector, then adjust the shafts until the coil sits just above the ground.
2. Adjust the bungee length to slightly lift the detector. You will feel the weight transfer to the harness, and you should be able to freely swing the detector without the coil dragging on the ground.
3. Lock the bungee length by pulling the free end upwards.

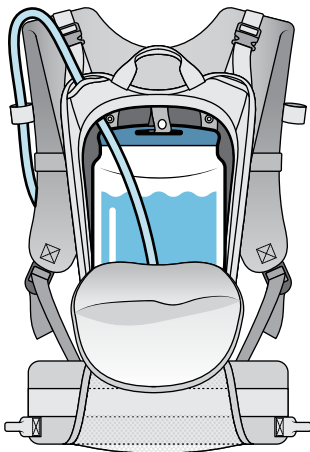


PRO-SWING™ 125 Harness *[continued]*

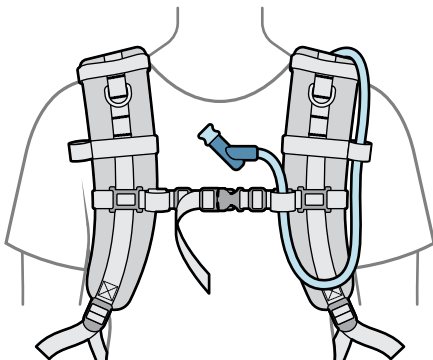
USING A HYDRATION RESERVOIR

The PRO-SWING™ 125 has a compartment on the back designed to hold a hydration reservoir *[not supplied]* with a capacity of up to 2 liters [68 oz].

1. Unzip the compartment on the back of the harness and insert your hydration reservoir. Depending on your reservoir, you can hang it from the loops at the top of the compartment.
2. Route the drinking tube through the hole at the top left or right of the compartment.



3. Route the tube over through the elastic loop on the shoulder strap, then up through the elastic loop on the chest strap.

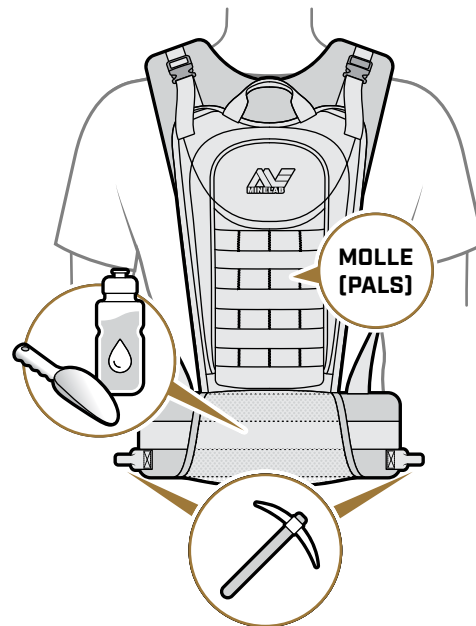


4. Zip the compartment closed.

ATTACHMENT POINTS

The harness has additional useful pockets and loops to help you carry your gear:

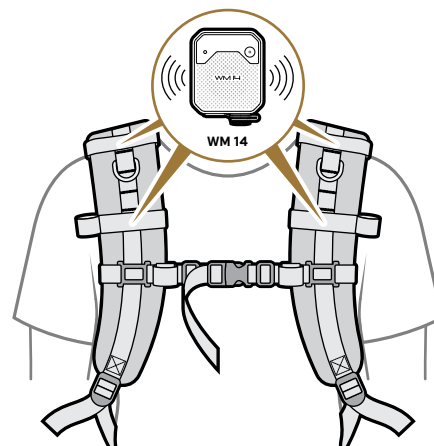
- An air-mesh pocket on the back of the hip belt is a useful way to carry a water bottle, plastic scoop, items of clothing etc.
- Two sturdy webbing loops on the hip belt can hold a pick or digging tool.
- The back of the harness has a PALS (Pouch Attachment Ladder System) webbing panel making it compatible with MOLLE accessories (Modular Lightweight Load-carrying Equipment).



WM 14 Attachment Points

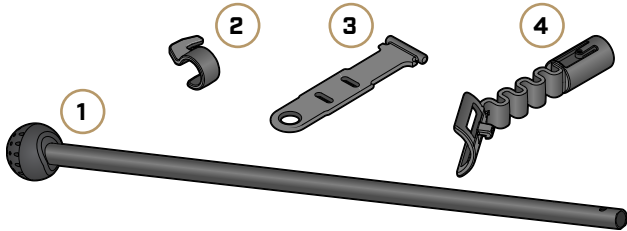
The WM 14 can be clipped onto the webbing loops located on the arm straps so that the speaker is near your ears.

CAUTION: Risk of hearing discomfort or damage. Do not place the WM 14 speaker directly against your ears.



GA 10 Guide Arm

The GA 10 Guide Arm is an optional attachment that helps to reduce fatigue during long detecting sessions, and increases swing accuracy. The GA 10 attaches to the mid shaft and features a Flex-link and strap for easy adjustment.



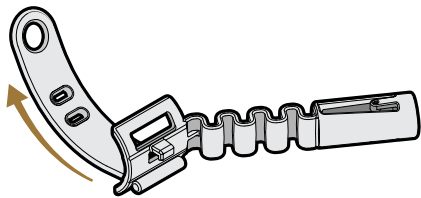
PARTS OF THE GA 10

1. Shaft and handle
2. C-clip
3. Strap
4. Flex-link

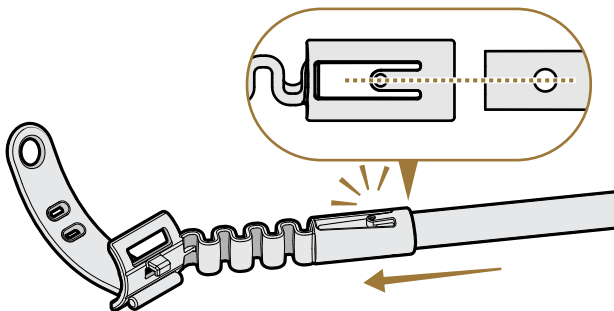
GA 10 ASSEMBLY

Assemble the Parts of the GA 10

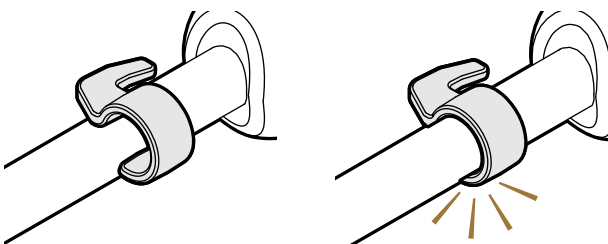
1. Attach the shaft strap to the Flex-link by inserting the end of the strap into the narrow slot, pulling until it is captured.



2. Align the holes in the shaft with the key on the Flex-link. Push the Flex-link onto the end of the shaft until it clicks into place.



3. Attach the C-clip with the hook pointing toward the GA 10 handle. Apply firm pressure to snap the clip onto the shaft.

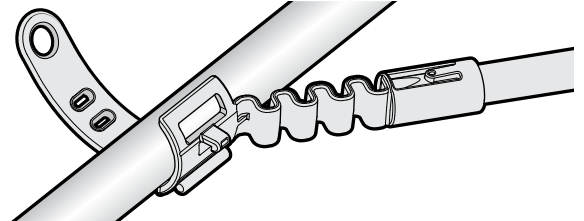


Attach GA 10 to the Detector

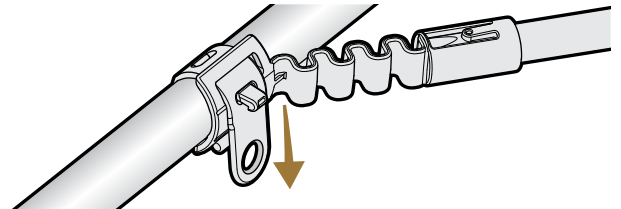


The GA 10 can be assembled to the detector for left or right handed use.

1. Position the Flex-link approximately half way down the detector's mid shaft.



2. Wrap the strap around the shaft and loop the end through the slot on the Flex-link. Pull the strap tight until the Flex-link hook is through the first slot on the strap.

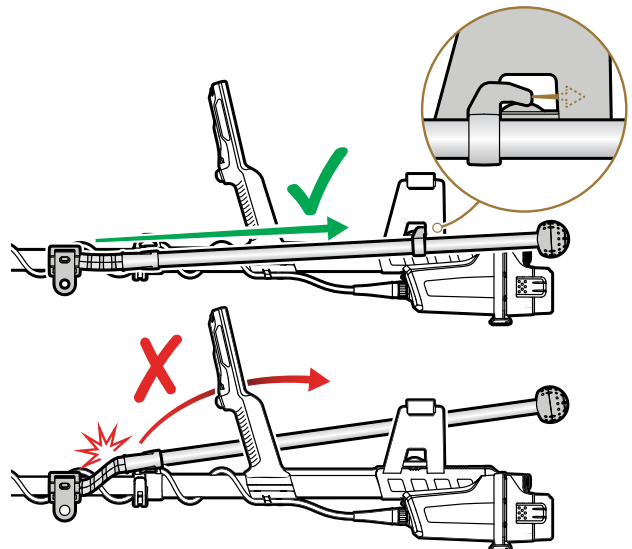


i Adjust the position of the GA 10 on the shaft until it is comfortable when swinging the detector.

STORE THE GA 10

When not in use or for storage, lay the GA 10 parallel to the detector's shaft and slide the C-clip into the armrest.

! NOTICE: Do not store the GA 10 by lifting it over the handle to the opposite side of the detector, as this will cause premature flex-link fatigue.



Batteries and Charging

SUPPLIED CHARGERS

The GPZ 8000™ and WM 14 batteries can be charged by the following supplied charging methods:

- The Universal USB-C AC Charger.
- The USB-C DC Car Charger, plugged into either:
 - a powered vehicle accessory socket; or
 - into the accessory socket end of the supplied crocodile clip adapter for direct 12 V battery charging.

i While any standard USB-C port compatible with USB battery charging can be used to charge the WM 14, the detector batteries require a USB-C port with Power Delivery (PD) and a charging source capable of delivering at least 30 W for maximum charging speed; the detector batteries will not charge if connected to a USB-C port that does not support PD.

i Beginning each detecting trip with fully charged detector batteries and WM 14 is recommended.

CHARGER INFORMATION AND SAFETY

! **CAUTION:** Only charge the detector battery and the WM 14 with good-quality USB chargers that have the following minimum charging capacities:

- GPZ 8000™ Battery: 2 A @ 15 V
- WM 14 Battery: 2 A @ 5 V

Risk of USB charger failure if a low-quality charger is used. Look for the following marks on USB chargers:



! **CAUTION:** Only charge the detector battery and the WM 14 in ambient temperatures between 0°C and +40°C (32°F and +104°F).

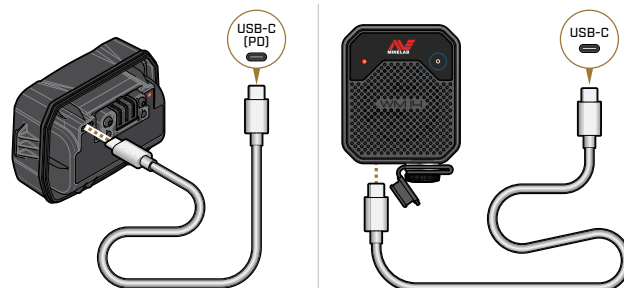
! **CAUTION:** If the battery reaches temperatures of approximately 70°C (158°F), the internal protection circuit may activate and shut down the battery. If this occurs, the battery will stop powering the detector and will not operate until it is reset. Allow the battery to cool to normal ambient temperature, then charge it to reset the internal protection circuit.

! **NOTICE:** Minelab Metal detectors and accessories are not intended to be operated while connected to a mains [AC] charger.

i When charging the detector battery, the power delivered by the charging source must be minimum 30 W in order to achieve the maximum charging speed.

CHARGING BATTERIES

The GPZ 8000™ and WM 14 have rechargeable lithium-ion batteries. To charge, connect to one of the supplied chargers via a supplied charging cable.



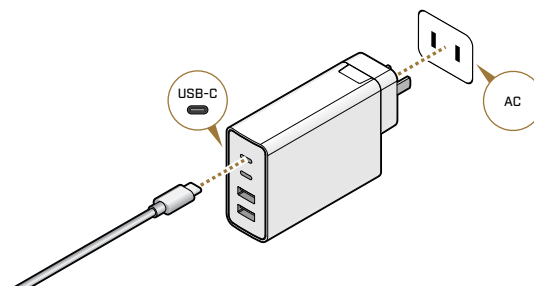
Battery Status LED

- Charging (on red)
- Fully charged (on blue)
- Charging Error (flashing red)

Universal USB-C AC Charger

! **CAUTION:** Only use the AC charger indoors, in temperatures between 0°C and +25°C (32°F and +77°F).

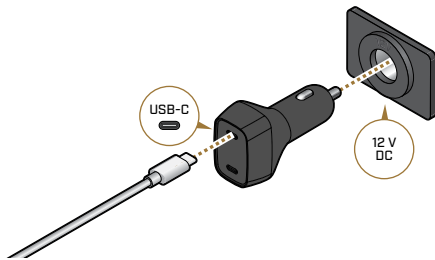
1. The Universal USB-C AC Charger is supplied with interchangeable plug adapters for different regions. Select the plug adapter suitable for your region and slide it onto the charger until it clicks into place.
2. Plug the charger into a powered AC wall outlet.
3. Connect the charger to the detector battery or WM 14 via a supplied USB-C charging cable.
4. When charging is complete, the charge status LED will change to solid blue.



Batteries and Charging *[continued]*

USB-C DC Car Charger

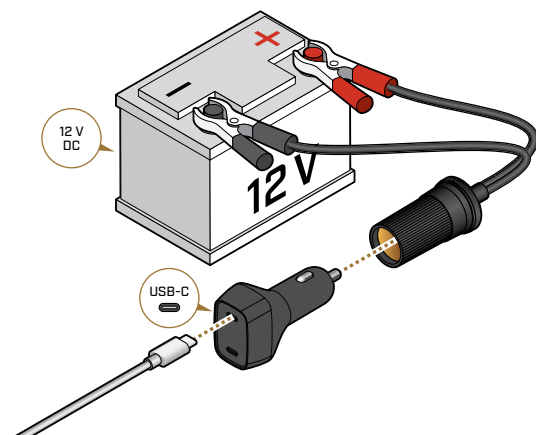
1. Plug the USB-C DC car charger into a powered 12 V accessory socket.
2. Connect the charger to the detector battery or WM 14 via a supplied USB-C charging cable.
3. When charging is complete, the charge status LED will change to solid blue.



USB-C DC Car Charger with Crocodile Clip Adapter

! CAUTION: Risk of sparking or damage. When connecting the crocodile clip adapter to a battery, connect the red (positive) clip first, then connect the black (negative) clip. When disconnecting, remove the black clip first, followed by the red clip.

1. Attach the red positive (+) clip to the positive (+) battery terminal. Next, attach the black negative (-) clip to the negative (-) battery terminal.
2. Plug the USB-C DC car charger into the socket on the crocodile clip adapter.
3. Connect the charger to the detector battery or WM 14 via a supplied USB-C charging cable.
4. When charging is complete, the charge status LED will change to solid blue.



Wired Headphones

SENNHEISER® HD 505 WIRED HEADPHONES

The GPZ 8000™ is supplied with high-fidelity Sennheiser® HD 505 wired headphones with a 3.5 mm (1/8") connector.

NOTICE: Sennheiser® HD 505 wired headphones are NOT waterproof.



Sennheiser® HD 505
Wired Headphones

USING THE MINELAB AUXILIARY CURLY CABLE

Using the supplied Minelab auxiliary curly cable instead of the standard cable is recommended. It has a special overmold that interfaces with the headphone socket on the GPZ 8000™ to form a waterproof IP67-rated seal. This allows the detector's headphone socket (only) to safely withstand rain or submersion to < 1 m (3') for up to 30 minutes without damaging the detector.

Connect the 2.5 mm (3/32") bayonet end of the supplied detachable curly cable to the headphones — insert and rotate clockwise to lock.

NOTE: Make sure the bayonet end of auxiliary cable is fully plugged in and locked. Failure to fully plug in the cable will result in partial or no audio.



CAUTION: DO NOT submerge the headphones, they are NOT waterproof. Only the connector, when coupled to the detector, can be submerged for up to 30 minutes.

USING OTHER WIRED HEADPHONES

Any standard 3.5 mm (1/8") headphones can be connected to GPZ 8000™ and the WM 14, however the headphone connector overmold must be less than 9 mm (0.35") in diameter, otherwise the connector will not fit inside the headphone socket.

NOTE: Echo Sonic Pro™ audio will only work when using stereo headphones.

CAUTION: When connecting headphones other than the supplied headphones, be aware that sound quality may be degraded, and audio output could be significantly quieter or louder. High volume audio can cause hearing damage.

CONNECTING HEADPHONES

1. Make sure that the auxiliary cable is plugged into the headphones and rotated clockwise to lock securely.
1. Unscrew the dust cap from the headphone socket on the detector. If it is tight, it can be loosened with a small coin.
2. Make sure that the socket and connector are dry and free from sand, dust and dirt.
3. Plug the headphones into the headphone socket. The headphones icon (🎧) will appear in the Status Bar.
4. Carefully align the retaining ring over the connector thread and screw them together until firmly tightened, making sure no cross-threading occurs.

NOTICE: When headphones are not in use, make sure that the dust cap is screwed firmly into place.



HEADPHONE SOCKET SUBMERSION

Before submerging the detector's headphone socket, make sure that either headphones (using the supplied Minelab auxiliary curly cable) or the waterproof dust cap are securely fitted to the headphone socket. While the uncovered headphone socket is waterproof and can be submerged without immediately damaging the internal electronics of the detector, it can cause corrosion of the socket and false headphone detection.

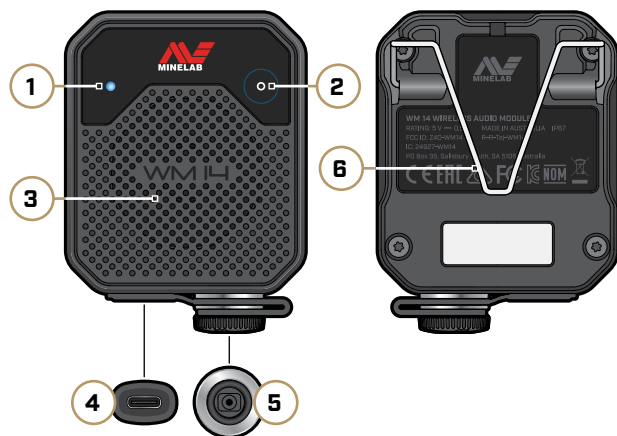
NOTICE: Whenever the Headphone Socket has been submerged, follow all advice listed in [Detector Headphone Socket Maintenance](#) on page 62.

WM 14 Wireless Audio Module

WM 14 OVERVIEW

The WM 14 Wireless Audio Module achieves clear sound with no perceivable time delay.

You can use the WM 14 inbuilt speaker or connect wired headphones. It has a belt clip on the back that can attach to the PRO-SWING™ 125 harness — see [WM 14 Attachment Points](#) on page 15.



Parts of the WM 14

1. Status LED
2. Control button
3. Speaker
4. USB-C charging port with dust cap
5. Headphone socket 3.5 mm (1/8") with dust cap
6. Belt clip

WM 14 Status LED

- | | |
|--|--|
| | Pairing mode (alternating blue/red) |
| | Connected (flash blue once every 3 seconds) |
| | Searching for previously connected detector (flash blue 3 times every 3 seconds) |
| | Low battery (flashing red) |
| | Charging (on red) |
| | Fully charged (on blue) |
| | Charging error (flashing red when charging) |
| | Factory reset complete (flash pink twice) |

CHARGING THE WM 14

See [Charging Batteries](#) on page 17.

PAIR THE WM 14 TO THE DETECTOR

Pairing the WM 14 Wireless Audio Module to the GPZ 8000™ is only required at first-use. It will automatically connect for future uses, although re-pairing is required following a factory reset of either the WM 14 or the detector.

1. Make sure the WM 14 is turned Off, and is close to the detector.
2. To enter pairing mode, press and hold the control button on the WM 14 until there is an ascending tone followed by two high-pitched beeps and the status LED begins alternating blue/red.

The WM 14 will automatically turn Off after 5 minutes if no connection occurs.

3. Turn the detector On.
4. To enter pairing mode, press and hold the wireless side button []. The wireless audio indicator [] in the Status Bar will flash rapidly.

If the detector has never been paired to a WM 14, or if it was factory reset, it will automatically enter pairing mode as soon as the wireless side button is short-pressed.

Wireless audio on the detector will automatically turn Off after 5 minutes if no connection occurs.

5. The WM 14 will connect, the wireless audio indicator [] in the detector's Status Bar will remain On, and the LED on the WM 14 will flash blue once every 3 seconds.

RECONNECT A PREVIOUSLY PAIRED WM 14

1. Make sure the WM 14 is turned Off, and is close to the detector.
2. Press the control button on the WM 14 until there is an ascending tone. The status LED will flash blue 3 times every 3 seconds.

The WM 14 will automatically turn Off after 5 minutes if no connection occurs.

3. Turn the detector On.
4. Short-press the wireless side button []. The wireless icon [] in the Status Bar will flash slowly as the detector searches for the previously paired WM 14.
5. The WM 14 will connect, the wireless audio indicator [] in the detector's Status Bar will remain On, and the LED on the WM 14 will flash blue once every 3 seconds.

Wireless audio on the detector will automatically turn Off after 5 minutes if no connection occurs.

WM 14 Wireless Audio Module *[continued]*

FACTORY RESET / UNPAIR THE WM 14

To unpair the WM 14, factory reset the WM 14. *Factory resetting the detector is another way to unpair the detector from the WM 14.*

1. Start with the WM 14 turned Off.
2. Press and hold the control button for about 10 seconds until the status LED flashes pink and there are two beeps, indicating that unpairing is complete.

CONNECTING HEADPHONES

1. Unscrew the dust cap from the headphone socket. If it is tight, it can be loosened with a small coin.
2. Make sure that the socket and connector are dry and free from sand, dust, and dirt.
3. Plug the headphones into the headphone socket.
The headphones icon (🎧) will appear in the Status Bar.
4. Carefully align the retaining ring over the connector thread and screw them together until firmly tightened, making sure no cross-threading occurs.

! NOTICE: When headphones are not in use, make sure that the dust cap is screwed firmly into place.

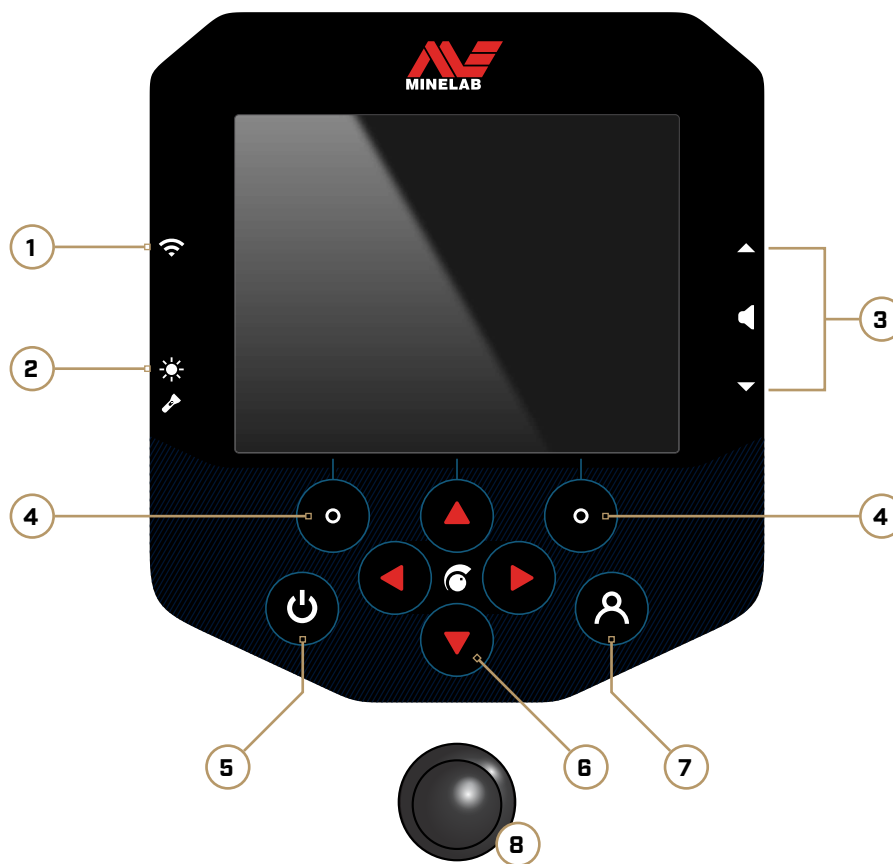


CARE AND MAINTENANCE

See WM 14 Care and Maintenance on page 62.

Overview

Controls



1. WIRELESS AUDIO

Short-press to turn wireless audio On or Off. If there is no previously paired WM 14, pairing mode will start automatically. Long-press to enter wireless pairing mode to connect the WM 14 (page 20).

2. BACKLIGHT/FLASHLIGHT

Short-press to cycle through the backlight brightness settings — High, Medium, Low and Off (page 31). To set the backlight timeout duration, see page 43. Long-press to turn the flashlight On or Off (page 32). To set the flashlight brightness, see page 42.

3. ADJUST VOLUME

Press ▲/▼ to adjust the global audio volume level (page 33).

4. SOFT KEYS ×2

The soft key actions change depending on the screen you are viewing. The current actions are displayed directly above each soft key in the Action Bar.

5. POWER

Short-press to turn the detector On or Off. Press and hold from Off to restore factory default settings (page 65).

6. NAVIGATION ARROWS

Long-press ▲ from the Detect Screen (page 24) to open the Settings Menu. Press ◀/▶ from the Detect Screen to adjust Sensitivity. Press ◀/▶ from within the Ground Type Menu to select the Ground Type setting. Press ▲/▼/◀/▶ from within the Settings Menu to navigate between and adjust settings.

7. USER SHORTCUT

From the Detect Screen, press to use the assigned shortcut. **Tracking On/Off (4w)** is assigned by default. See page 46 for all shortcuts and instructions on how to assign one.

8. QUICK-TRAK

Press and hold throughout a Quick-Trak Ground Balance procedure (page 53).

Screens

THE DETECT SCREEN

1. STATUS BAR

- Battery level
- Tracking Ground Balance
- Backlight
- Flashlight
- Low-latency wireless
- Echo Sonic Pro™ audio
- Wireless headphones
- Wired headphones

2. SENSITIVITY LEVEL [PAGE 28]

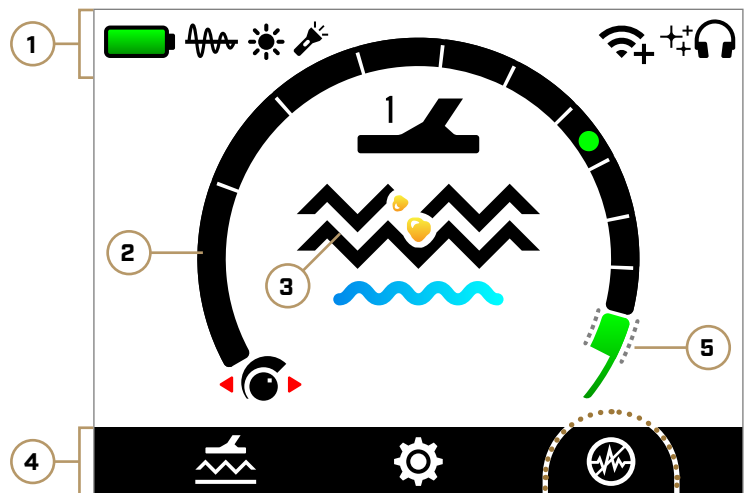
3. GROUND TYPE [PAGE 26]

4. ACTION BAR

Displayed on most screens, the Action Bar displays the actions that will be performed by the soft keys directly below the icon. The soft key actions change between different screens.

5. DEFAULT SETTING MARKERS

Default settings throughout the detector are indicated by a gray dotted line.



From the Detect Screen, press the left soft key [Ground Type] to open the Ground Type Menu.

Soft keys perform the action displayed in the Action Bar directly above the soft key.

From the Detect Screen, long-press to open the Settings Menu.

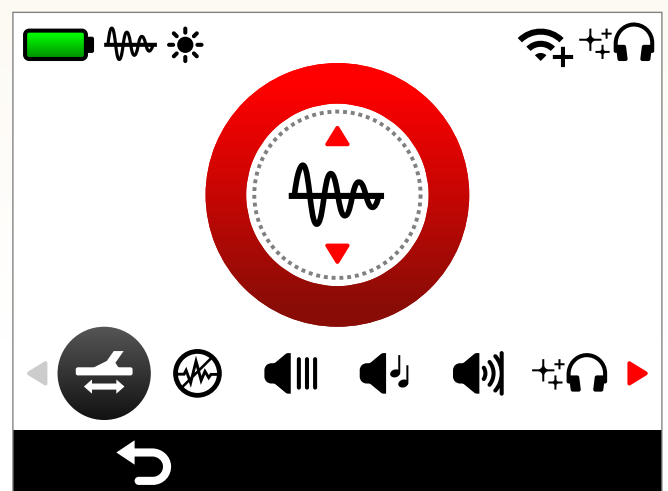
THE SETTINGS MENU

For detailed information for each setting, see the [Settings Menu](#) section starting on [page 34](#).

Open the Settings Menu

1. From the Detect Screen, long-press to open the Settings Menu.
2. Press / to navigate through the settings.
Press [back] to return to the Detect Screen.

Ground Balance	Echo Sonic Pro™ Audio
Manual Noise Cancel	Flashlight Brightness
Threshold Volume	Backlight Timeout
Threshold Pitch	Mineralization Level On/Off
Volume Limit	User Shortcut



General Settings

Ground Types

THE GROUND TYPE MENU



This menu lets you change the Ground Type.

For an overview of each Ground Type, see [Ground Type Characteristics](#) on page 27.



You can assign your Favorite Ground Type to the user shortcut button — see [page 46](#).



Ground Type on the Detect Screen.

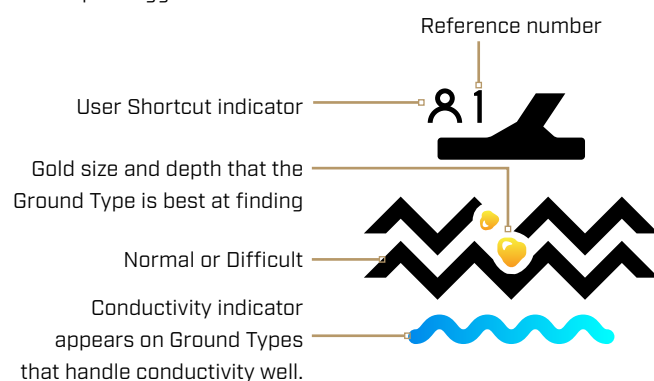


The Ground Type Menu

The Ground Type Icon

The Ground Type icon represents three main soil properties:

- whether the Ground Type is suited to ground that is homogeneous, with low levels of mineralization and iron (Normal), or to ground with high levels of mineralization, iron, and variability (Difficult)
- whether the Ground Type handles conductivity well
- the typical size and depth of gold the Ground Type is best at finding, ranging from smaller, shallow nuggets to larger, deeper nuggets.



CHANGE THE GROUND TYPE

- From the Detect Screen, press the left soft key [ **Ground Type**] to open the Ground Type Menu.
- Press ◀/▶ to navigate to your chosen Ground Type. Changes take effect immediately, so you may hear a short pause in the audio as you change Ground Types.
- Press [ **back**] to return to the Detect Screen.

CHOOSING THE RIGHT GROUND TYPE

Each Ground Type has unique characteristics and default settings optimized for specific ground conditions and detecting goals. Selecting the appropriate Ground Type is important to achieve the best performance possible.

The correct Ground Type is the one that delivers low and stable background noise over the same target-free area while maintaining sensitivity to gold.

See [Coil and Ground Type Optimization](#) on page 50 for procedures for identifying the best Ground Type to use depending on your coil and detecting intent.

Ground Types *[continued]*

GROUND TYPE CHARACTERISTICS

When detecting in ground with high levels of mineralization, movement of the detector over the ground can produce unwanted false signals known as ground noise. The GPZ 8000™ has been designed to minimize unwanted ground noise. The Ground Type setting controls the amount of unwanted ground noise that the detector will remove from the audio. Note that the below abilities will vary slightly depending on the coil you are using.

Difficult Deep *[default]*

Stable, all-round option for mixed ground containing both mineralization and conductivity.

Difficult Deep is designed for soil where mineralization and conductivity occur together and may vary across the search area. It offers excellent stability and reliable depth on a wide range of target sizes, making it a dependable choice when ground conditions are unknown, changing, or difficult to interpret. If you don't feel confident choosing a Ground Type, use Difficult Deep as your starting point.



Mineralization Handling	Conductivity Handling	Tiny Gold	Small Gold	Medium Gold	Large Deep Gold
★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★

Difficult High Yield

Optimized for highly mineralized ground with low conductivity.

Difficult High Yield performs best in iron-rich, highly mineralized soil where mineralization is the primary source of ground noise. It provides stable operation and good depth on small to medium targets, helping maintain sensitivity in challenging ground. Difficult High Yield has poor handling of conductivity, therefore it should only be used when conditions are quiet.

This setting should only be used if the soil is relatively shallow, or known to contain only small gold, and operates best when paired with the Z13 or Z17 coil.



Mineralization Handling	Conductivity Handling	Tiny Gold	Small Gold	Medium Gold	Large Deep Gold
★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★

Normal Deep

Balanced performance for quiet, conductive ground.

Normal Deep is intended for relatively benign ground where conductivity is present but mineralization is low. It delivers very good depth and stable performance, particularly on medium to larger targets, while maintaining good control in conductive soils. This mode is best used when the ground is quiet and consistent but still requires handling of conductivity.



Mineralization Handling	Conductivity Handling	Tiny Gold	Small Gold	Medium Gold	Large Deep Gold
★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★

Normal Extra Deep

Maximum depth in quiet, low-conductivity ground.

Normal Extra Deep is designed to achieve maximum depth on medium to large gold in benign to normal ground. It performs best where the ground is homogeneous and conductivity is minimal, allowing deeper targets to be detected more clearly. The trade-off to Normal Extra Deep's excellent depth ability is poor handling of heavy mineralization and conductivity, therefore it should only be used when conditions are quiet.



Mineralization Handling	Conductivity Handling	Tiny Gold	Small Gold	Medium Gold	Large Deep Gold
★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★

Sensitivity

GPZ 8000™ is highly sensitive and has adjustable sensitivity. Setting the correct Sensitivity level for individual detecting conditions will maximize detection depth.

There are manual settings ranging from 1 to 10, and two automatic settings, Auto (default) and Auto +.



Sensitivity on the Detect Screen. The gray dotted default settings marker indicates the default setting, Auto.

ADJUST SENSITIVITY



From the Detect Screen, press
◀/▶ to adjust sensitivity.

AUTO SENSITIVITY

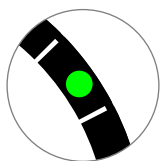
The two auto sensitivity settings automatically maximize sensitivity by continuously sampling overall detector noise (including ground noise and EMI) and adjusting accordingly.

Auto uses a lower sensitivity level to reduce noise and provide smoother audio, and is recommended for most users.

Auto + generally has slightly higher sensitivity allowing weaker targets to be heard, however some responses may be noise rather than weak targets. This setting is best for locations with low EMI and low ground noise, or users who can tolerate a little more noise.

 Both Auto settings will always determine the best sensitivity level for each of the Ground Types. It will automatically adjust if the Ground Type setting is changed.

The Auto Marker



For the auto settings, a green dot is displayed on the sensitivity gauge to indicate the level currently selected by the detector. The dot will move around while you detect as sensitivity adjusts to manage changing noise conditions.

MANUAL SENSITIVITY

Choose the highest stable manual sensitivity setting (levels 1 to 10) for optimum performance.

Adjust Sensitivity Manually

Generally, start with the Z18 coil unless you are detecting in areas with known high levels of EMI or soil conductivity.

 Before reducing the Sensitivity, always try to resolve noise by first performing:

- Noise Cancel (page 52), followed by
- Quick-Trak Ground Balance (page 53)

For steps to identify the source of noise, see [Identifying the Source of Noise on page 54](#).

When setting the sensitivity manually, select the highest level where you can detect small variations in the threshold tone, and no higher. This will maximize the detector's sensitivity to gold. There should be some variation in the audio responses, but it should not sound erratic.

1. Press ◀ to reduce the sensitivity to level 1.
2. Press ▶ to increase Sensitivity until false signals occur.
 - **If noise is the result of EMI**, keep the coil stationary while adjusting the sensitivity.
 - **If noise is the result of ground noise**, swing the coil close and parallel to the ground while adjusting the sensitivity.
3. Reduce by one level, or just enough that the false signals disappear.
4. Sweep the coil over a **clear** patch of ground, and reduce the sensitivity level further if there is any ground noise.

 When using manual sensitivity, periodically readjust the setting to maintain the highest usable level as ground conditions change.

Low vs. High Manual Sensitivity

Low manual sensitivity settings (1 to 5) produce smoother audio, though some target signals may not be audible. Only use low settings if Noise Cancel and Quick-Trak do not reduce noise.

High manual sensitivity settings (6 to 10) make it more likely to hear more targets in quiet conditions, however some targets may be masked by noisy audio.

MANUAL VS. AUTO SENSITIVITY

Choosing between Auto and Manual sensitivity involves a trade-off between stability and maximum performance. Auto sensitivity prioritizes smooth operation and ease of use, while Manual sensitivity gives experienced users greater control and the potential to detect weaker targets, particularly in challenging ground.

When using Manual sensitivity, sweeping over a target will produce a consistent audio response, even as ground conditions change. This consistency makes it easier to recognize faint or marginal targets, as the detector does not automatically adjust sensitivity in response to changing noise conditions.

In Auto sensitivity, the detector continuously adjusts sensitivity to changing noise conditions. In some cases, a target may be interpreted as ground noise, causing its audio response to change or gradually diminish with repeated sweeps. This can result in a target sounding different each time it is detected, or in some cases being partially filtered out.

! IMPORTANT: Auto sensitivity can make the detector seem quieter and more stable, however be aware that this may come at the cost of reduced sensitivity to weaker targets, so they may be missed.

SENSITIVITY, VOLUME AND THRESHOLD VOLUME INTERACTION

The Volume, Threshold Volume, and Sensitivity settings work together to determine how clearly you hear faint target signals. For best performance, these settings should be adjusted together so the detector remains stable while still allowing weak gold signals to stand out from the background audio.

If these settings are not balanced, the audio may become difficult to interpret. For example, setting the Sensitivity too high while the Volume is also high can amplify ground noise and interference, making it harder to recognize real targets. Conversely, if the Threshold Volume is too low or turned Off, faint signals may be difficult to hear. Correctly balancing these settings helps maintain a smooth, stable audio response while ensuring small or deep gold signals remain detectable.

Adjusting Sensitivity, Volume, and Threshold Volume Together

1. Start with the **Volume** set to **13** (factory default setting).
2. Adjust the **Sensitivity** until it is stable for the environment you are in.
3. Adjust **Threshold Volume** until a soft, steady tone is audible.
4. If you reach the maximum Threshold Volume setting and the threshold tone is still too loud or noisy, reduce the **Volume** until the threshold tone is comfortable.

Wireless Audio

The GPZ 8000™ is supplied with a WM 14 wireless audio module that connects to the detector using Minelab's proprietary low-latency wireless protocol.

Wireless Audio is Off by default.



The wireless audio icon appears in the Status Bar when wireless audio is On.

TURN WIRELESS AUDIO ON/OFF

For instruction on pairing the WM 14 to the detector, see [Pair the WM 14 to the Detector \(page 20\)](#).

1. Press the Wireless Audio side button () to turn wireless audio On or Off. The wireless audio icon in the Status Bar will indicate its current status:
 - If the detector has not been paired to the WM 14 yet, or the WM 14 or detector has been factory reset, the icon () will **flash rapidly** indicating that the detector is in pairing mode.
 - If the WM 14 has already been paired, the icon () will **flash slowly** as the detector attempts to reconnect with the WM 14 — see [Reconnect a Previously Paired WM 14 \(page 20\)](#).
 - If the WM 14 has already been paired, is powered On, and is nearby, it will connect automatically. The icon () will be **solid on**, accompanied by the low-latency plus sign.

Wireless Audio on the detector will automatically turn Off after 5 minutes if no connection occurs.

Backlight

The GPZ 8000™ display backlight can be adjusted to suit all lighting conditions, from bright daylight to complete darkness.

There are 4 backlight settings: Off, Low, Medium, and High (default).

 Continual use of the backlight, especially at full brightness will decrease battery runtime.

You can optimize battery runtime by:

- using a lower backlight brightness setting, and
- reducing the Backlight Timeout duration — see [Set the Backlight Timeout Duration on page 43](#).

ADJUST THE BACKLIGHT

For instructions on setting the timeout duration of the backlight, see [Set the Backlight Timeout Duration \(page 43\)](#).

1. Short-press the backlight/flashlight button (☀️ / 🔦) on the side of the control panel to cycle through the backlight brightness settings from high to low.

When the backlight is On, the Backlight icon (☀️) is displayed in the Status Bar.

Flashlight

The GPZ 8000™ has a dual-LED flashlight located on the back of the control pod for detecting in low-light situations.

Flashlight settings are Off, Low, Medium and High.

The flashlight is Off by default each time the detector is powered On.



Continual use of the flashlight, especially at full brightness will decrease battery runtime.

Optimize battery runtime by reducing the flashlight brightness — see [Set the Flashlight Brightness](#) (page 42).

TURN THE FLASHLIGHT ON/OFF

For instructions on setting the brightness of the flashlight, see [Set the Flashlight Brightness](#) (page 42).

1. Long-press the backlight/flashlight button (☀️/💡) on the side of the control panel to turn the flashlight On or Off.

When the flashlight is On, the Flashlight icon (💡) is displayed in the Status Bar.

Volume

The Volume setting in the GPZ 8000™ behaves in the same way as master volume controls common in many audio systems. Changes to this setting increase or decrease the volume of all audio including system tones, detection tones, and the threshold tone. The Volume setting is essentially an amplifier for the global detector volume.

The threshold tone volume can be further adjusted using the separate Threshold Volume setting — see [Adjust the Threshold Volume on page 37](#).

The Volume setting ranges from 1 (quietest) to 17 (loudest) with a default setting of 13.



The volume adjustment bar appears on the screen while volume is being adjusted.

ADJUST VOLUME

1. Press the volume buttons (▲/▼) on the side of the control panel to increase or decrease the global detector volume.

Settings Menu

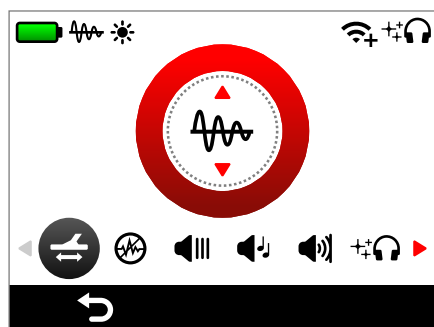
Tracking Ground Balance

Tracking Ground Balance will automatically track to the ground, and is the recommended setting. If you choose to turn tracking Off, you will need to regularly perform Quick-Trak (page 53) to maintain an accurate ground balance.

The Tracking Ground Balance setting can be turned On (default) and Off.



You can assign **Tracking Ground Balance On/Off** to the user shortcut button — see page 46.



Tracking Ground Balance in the Settings Menu and Status Bar

TURN TRACKING GROUND BALANCE ON/OFF

1. Navigate to: **Settings > Tracking Ground Balance**.
2. Press **▲/▼** to turn Tracking Ground Balance On (**On**) or Off (**Off**). The new setting will be displayed in the Status Bar.
3. Press (**↶ back**) to return to the Detect Screen.

Manual Noise Cancel

Manual Noise Cancel allows you to listen to each channel so you can manually select the one with the least interference.

The Manual Noise Cancel setting ranges from 1 to 128, with a default setting of 33.



Manual Noise Cancel in the Settings Menu

ADJUST MANUAL NOISE CANCEL

1. Raise the coil away from the ground, making sure there is no metal near the coil.
2. Navigate to: **Settings** > **Manual Noise Cancel**.
3. Press **▲/▼** to change the channel, pausing to listen to the interference coming from the detector. Keep the detector still during this process. Select the channel with the least interference.
4. Press [**↩ back**] to return to the Detect Screen.

Threshold Volume

The optional threshold tone is a constant background tone/hum that can help to make tiny signals more apparent. The Threshold Volume setting allows you to adjust the volume of this background tone. It can also help you to set the optimum sensitivity level — see [Adjusting Sensitivity, Volume, and Threshold Volume Together](#) (page 29).

The Threshold Volume setting ranges from 0 (Off) to 15 with a default setting of 6.



Threshold Volume in the Settings Menu

i A threshold tone allows all incoming signals to be audible. Small variations in the threshold tone are easily discerned by the human ear, making tiny signals more noticeable than if there was silence.

The ideal Threshold Volume setting is the point where the audio remains smooth and stable in the presence of typical noise while still producing a noticeable response on subtle targets.

ADJUST THE THRESHOLD VOLUME

1. Navigate to: **Settings > Threshold Volume**.
2. Press **▲/▼** to adjust the Threshold Volume. Changes take effect immediately, so listen to the audio to select your preferred setting.

3. Press **[↶ back]** to return to the Detect Screen.

If the soil conditions change, the Threshold Volume may need further adjustment.

TURN THE THRESHOLD TONE OFF

1. Navigate to: **Settings > Threshold Volume**.
2. Press **▼** until the Threshold Volume is 0 (Off).
3. Press **[↶ back]** to return to the Detect Screen.

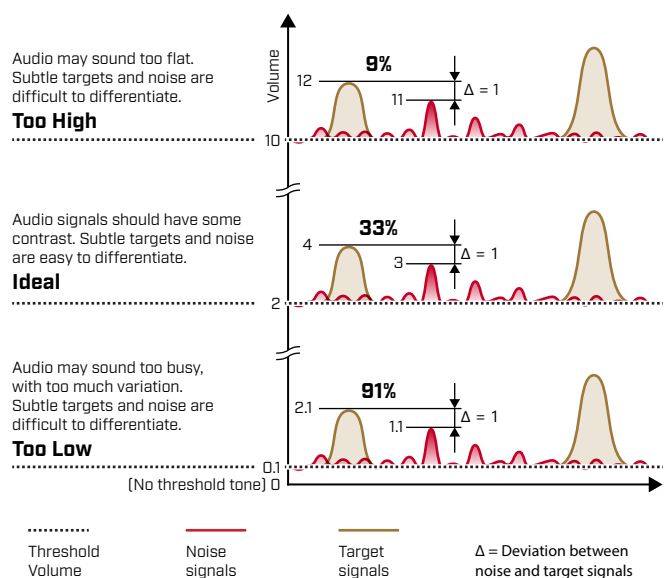
LOW VS. HIGH THRESHOLD VOLUME

The diagram below shows how adjusting the Threshold Volume changes the noticeability of the target signals relative to the threshold. The signals themselves do not change in magnitude — rather, the loudness of the threshold tone changes, which may affect how clearly targets stand out from noise.

The percentage indicates how strong the signal variation is between target and noise signals at different Threshold Volume settings, not how easy it is to hear targets. For example, while the signal deviation/difference (Δ) is the same in all cases, a very low threshold exaggerates all variations (including noise), making the audio too busy, reducing the ability to clearly identify subtle targets.

When the Threshold Volume is set correctly, it produces a faint audible hum. This will emphasize variations in signal responses which could be targets.

i Use a test target and adjust the Threshold Volume to create the three scenarios illustrated below. This will help you to understand the importance of setting the Threshold Volume correctly.



i The human hearing is especially sensitive to changes in sound intensity over time, because the auditory system is tuned to detect contrasts in loudness rather than just absolute volume.

Detecting Without a Threshold Tone

When the Threshold Volume is Off (0), some subtle targets may not be large enough to break into the audible region. Therefore detecting without a threshold tone may lead to not hearing some subtle targets.

Threshold Pitch

Threshold Pitch adjusts the pitch of the threshold tone. This setting is about personal preference, so adjust the Threshold Pitch to a level that is comfortable to you.

The Threshold Pitch setting ranges from 1 to 10 (low to high pitch), with a default setting of 5.



Threshold Pitch in the Settings Menu

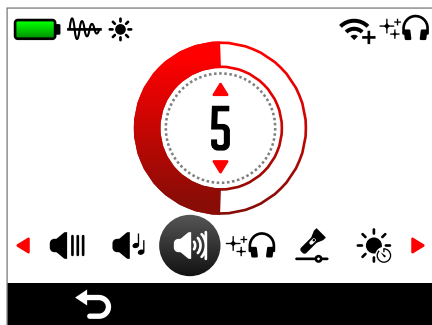
ADJUST THE THRESHOLD PITCH

1. Navigate to: **Settings > Threshold Pitch.**
2. Press **▲/▼** to adjust the Threshold Pitch. Changes take effect immediately, so listen to the audio to select your preferred setting.
3. Press **[↶ back]** to return to the Detect Screen.

Volume Limit

Volume Limit 'clips' the signal loudness of large targets without affecting the volume of quieter targets, to ensure that large targets do not hurt your ears.

The Volume Limit setting ranges from 1 to 10 (low to high volume), with a default setting of 5.



Volume Limit in the Settings Menu

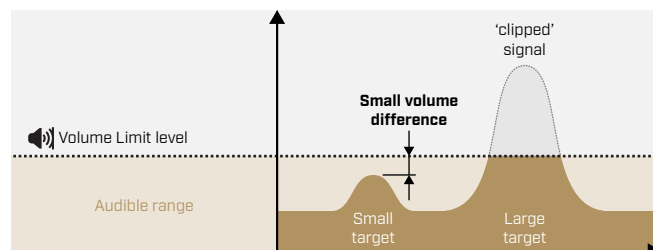
ADJUST THE VOLUME LIMIT

1. Navigate to: **Settings > Volume Limit**.
2. Sweep over a large metallic target to cause a loud tone. While doing this, press **▲/▼** to adjust the Volume Limit until the loud tone is at a comfortable volume.
3. Press **[↶ back]** to return to the Detect Screen.

LOW VS. HIGH VOLUME LIMITS

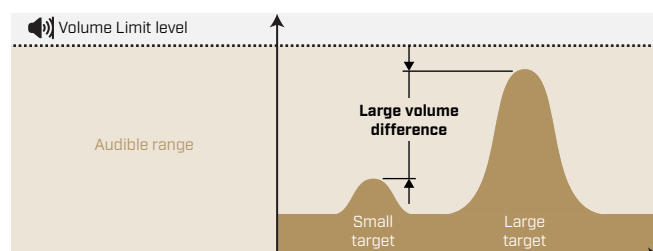
Low Volume Limit

Low Volume Limit settings make the volume of large and small targets more similar. This means it may be more difficult to differentiate target size from volume alone, however large targets will not hurt your ears.



High Volume Limit

High Volume Limit settings increase the volume difference between a small and large target, however very large targets may be at an uncomfortably loud volume.



Echo Sonic Pro™ Audio (ESP™)

Echo Sonic Pro™ is Minelab's new audio technology that works with GeoZVT™ to output high-fidelity detection audio that contains more information than ever before about the ground and targets.

ESP™ adds another dimension to detection audio — the left and right sides of your headphones will sound different because each outputs different ground and target information. See [Interpreting ESP™ Ground Signals on page 40](#) and [Summary of ESP™ Responses to Different Ground types on page 41](#) for information on how to interpret ESP™ audio and to choose the best Ground Type setting for your location.

ESP™ audio is only available when headphones are connected to the detector or to the WM 14. When no headphones are connected, ESP™ is disabled.

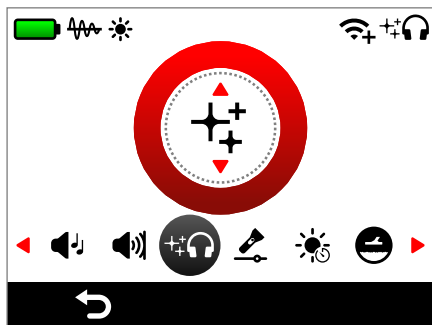
The ESP™ settings are On (stereo, default) and Off (mono).

Each setting changes the way audio sounds:

- When ESP™ is On, detection audio sounds different on each side of the headphones (stereo audio).
- When ESP™ is Off, detection audio sounds identical on each side of the headphones (mono audio).



You can assign **Echo Sonic Pro™ audio On/Off** to the user shortcut button — see [page 46](#).



Echo Sonic Pro™ audio in the Settings Menu

TURN ESP™ ON/OFF

1. Navigate to: **Settings** > **Headphones Echo Sonic Pro™ audio**.
2. Press **▲/▼** to turn it On or Off.
3. Press **[↶ back]** to return to the Detect Screen.

ESP™ States

	Enabled but inactive (no headphones connected)
	Enabled and active (headphones connected to detector)
	Enabled and active (headphones connected to WM 14)

INTERPRETING ESP™ GROUND SIGNALS

The ground noise caused by magnetic soils is often called 'mineralization' by prospectors, with the technical term being 'VRM' (Viscous Remanent Magnetism). The ground noise caused by soil conductivity is sometimes from salty soils, but is more often caused by non-saline (non-salty) soil chemistry.

Soil conductivity often increases after rain, however some soils are not conductive, even when wet. Ground noise from soil conductivity and mineralization are unrelated but can occur together and produce a net ground noise that is challenging to interpret. Thus, many prospectors do not realize that ground noise can often be caused by two unrelated sources simultaneously.

The Left and Right headphone audio of Echo Sonic Pro™ has differing sensitivities to these two causes of ground noise (magnetic and conductive). Furthermore, these different Left and Right sensitivities to the two ground noise sources also vary between the four Ground Types.

The major advantage of Echo Sonic Pro™ is that the differing Left and Right audio ground noise sensitivities assist in determining the sources of ground noise. As a result, Echo Sonic Pro™ can be used to choose which Ground Type to select to be most productive with the GPZ 8000™.

The Left and Right audio sensitivities to both mineralization (black zigzags) and soil conductivity (blue wavy lines) for each different Ground Type are shown in: [Summary of ESP™ Responses to Different Ground types on page 41](#).

Echo Sonic Pro™ Audio (ESP™) *[continued]*

Summary of ESP™ Responses to Different Ground types

Difficult Deep



This generally has the lowest overall ground noise out of all the Ground Types. If the Left side audio produces unacceptably high ground noise as the coil is swept over the ground, then the likely source is soil conductivity. This is because the Left audio has Very Low sensitivity to mineralization but Low sensitivity to soil conductivity. Hence the soil must be highly conductive, and therefore the Z17 coil should be used because the Z17 has the lowest sensitivity to soil conductivity out of all the coils.

Difficult High Yield



If the Left audio produces unacceptably high ground noise, this must be caused by soil conductivity, because the Left audio has Very Low sensitivity to mineralization, but High sensitivity to soil conductivity. Therefore, try Normal Deep because it has much lower sensitivity to soil conductivity, and if this also has unacceptably high ground noise (because of too high soil mineralization), then select Difficult Deep because this has Low sensitivity to both mineralization and soil conductivity.

Normal Deep



If the Left audio produces unacceptably high ground noise, then this must be caused by mineralization, because the Left audio has effectively zero sensitivity to soil conductivity, but High sensitivity to mineralization, and thus a Difficult Ground Type must be selected (such as Difficult Deep), because the Difficult Ground Types have much lower sensitivities to mineralization.

Normal Extra Deep



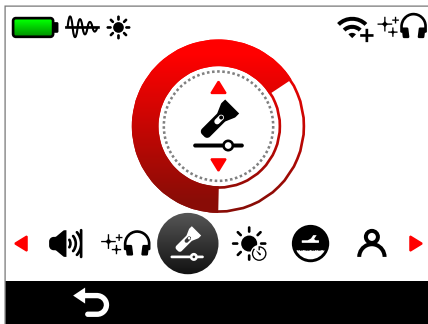
If the Right audio has unacceptably high ground noise, and, if the Right audio produces louder ground noise than the Left, then this must mostly be caused by mineralization (because the Right is more sensitive than the Left to mineralization, but less sensitive to conductivity than the Left). Therefore, try Normal Deep, and if that is too noisy (because of mineralization), then select Difficult Deep because this has Low Sensitivity to both mineralization and soil conductivity.

But if the Left audio ground noise is louder than the Right, then this must mainly be caused by soil conductivity (because the Left is more sensitive than the Right to soil conductivity), and it also suggests that mineralization is not a problem (because the Left is less sensitive to mineralization) and therefore select Normal Deep. However, if Normal Deep also produces unacceptably high ground noise (because of high mineralization), then select Difficult Deep because this has Low sensitivity to both mineralization and soil conductivity.

Flashlight Brightness

GPZ 8000™ has a flashlight for detecting in low-light situations. The Flashlight is Off by default each time the detector is powered On. The Flashlight Brightness settings are Low, Medium (default) and High.

i Continual use of the flashlight, especially at full brightness will decrease battery runtime. Optimize battery runtime by reducing the flashlight brightness.



Flashlight Brightness in the Settings Menu

SET THE FLASHLIGHT BRIGHTNESS

i To help choose the best brightness level for your lighting conditions, turn the flashlight On [\[page 32\]](#) while you are adjusting it.

1. Navigate to: **Settings** > **Flashlight Brightness**.
2. Press **▲/▼** to adjust the Flashlight Brightness.
3. Press **[↶ back]** to return to the Detect Screen.

Backlight Timeout

To conserve battery power, the backlight can be set to turn off automatically after a period of inactivity (no buttons pressed).

The Backlight Timeout settings are Off (the backlight never times out), 10, 20 (default), 30, and 60 seconds.



Backlight Timeout in the Settings Menu

SET THE BACKLIGHT TIMEOUT DURATION

1. Navigate to: **Settings** > **Backlight Timeout**.
2. Press **▲/▼** to set the time-out duration (in seconds) or set it to Off (**☒**).
3. Press [**↶** **back**] to return to the Detect Screen.

Mineralization Level On/Off

Mineralization Level is an optional setting that displays the approximate levels of ground mineralization. When it is enabled, a number is displayed along with a color bar that varies from green (low mineralization) to red (high mineralization). These provide a quick visual indication of the severity of mineralization in the soil.

When correctly interpreted, the Mineralization Level can be used to identify changes in soil profile, define potential detecting locations, and help with choosing the best Ground Type.

Mineralization Level can be turned On or Off (default).



Mineralization Level On/Off in the Settings Menu

TURN MINERALIZATION LEVEL ON/OFF

1. Navigate to: **Settings** > **Mineralization Level On/Off**.
2. Press **▲/▼** to turn the Mineralization Level On () or Off ().
3. Press [**↩ back**] to return to the Detect Screen.

Mineralization Level Off

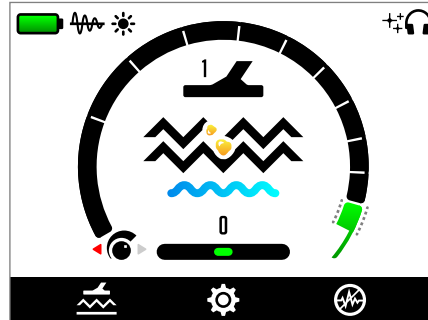
When the Mineralization Level is Off, it is not shown on the Detect Screen.

When the Quick-Trak button is pressed, the standard pop-up animation is displayed.



Mineralization Level On

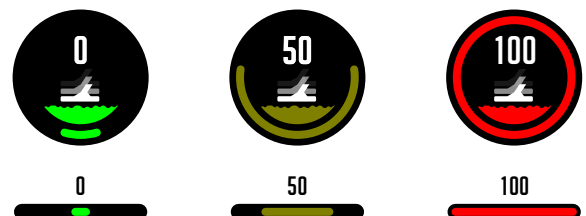
When the Mineralization Level is On, it is shown on the Detect Screen. It is also displayed as part of the pop-up animation when the Quick-Trak button is pressed.



Mineralization Level displayed on the Detect Screen, and while the Quick-Trak button is pressed.



The Mineralization Level's numerical value and color change to indicate the amount of mineralization in the soil; this refreshes every 2 seconds.



Low mineralization  High mineralization

As a general guide, if you see constant high values (over 60), use Difficult Deep. For nuanced information about what the Mineralization Level can mean, and practical adjustments you can make based on the displayed value and your detecting location — see [Interpreting the Mineralization Level](#) on page 45.

Mineralization Level On/Off *(continued)*

INTERPRETING THE MINERALIZATION LEVEL

This section outlines practical ways to interpret the Mineralization Level value.

When Using Normal Ground Types

In mild to moderate ground noise conditions, the Mineralization Level will generally be low to medium (approximately 0 to 40) as you would expect in normal soils.

In some instances however, mineralization may rise into the 40 to 60 range. This does not necessarily mean that you need to change the Ground Type setting; if the ground noise is remaining stable/manageable, you can continue detecting in the Normal Ground Types. If readings stay high (above about 60) and performance becomes harder to manage, switching to Difficult Deep may help.

Fluctuating Mineralization Level

Pay attention to Mineralization Level values that repeatedly rise and fall as you move across the ground, over several sweeps or several meters, as this often indicates changes in soil conditions.

These changes can mark boundaries between different soil layers or types of ground. Areas where Mineralization Level values change repeatedly may be worth slowing down and detecting more carefully, observing the reading to help you create a mental map of the zones that are most likely to contain gold.

Gold is often found in deeply weathered ground where iron-rich material has built up over time. These areas may not have obvious surface signs and are not always marked by visible quartz, so use the Mineralization Level to identify these zones instead.

Low Mineralization Environments

In areas with generally low Mineralization Level readings, the ground is usually easier to detect in. These locations often look lighter in color, less rocky, or more uniform in texture.

In these conditions, Normal Ground Types usually give the best depth and sensitivity and should be used whenever possible.

Mineralization Level Readings in Difficult Soils

When detecting in difficult soils, Mineralization Level readings will usually be higher overall, often between 60 and 100. This is normal and reflects the stronger ground filtering needed in heavily mineralized ground. Even so, useful patterns can still be seen. Changes in the Mineralization Level are often more meaningful than the absolute number.

Interpreting Mineralization in Difficult Ground

In Difficult Ground Types, it is often best to start detecting in areas where Mineralization Level values are mid-range (around 40–60) before moving into higher mineralization areas.

Very high readings do not automatically mean gold is present. Some ground is highly mineralized but contains no gold. However, changes in Mineralization Level, especially along the edges of mineralized areas, can justify spending more time detecting, particularly if the surrounding ground looks different in color, texture, or rock content.

The Mineralization Level reading shows how much iron-rich ground the detector is sensing near the surface. In some places, gold-bearing layers may sit deeper beneath less mineralized surface soil, so deeper gold does not always produce high Mineralization Level readings at the surface.

Steadily Decreasing Mineralization Level Values

A steady decrease from higher Mineralization Level values to lower values (for example, from 60 down to 25) often means the soil is blending to become more homogeneous, and likely also increasing in depth.

These deeper soils are frequently associated with weathered gold accumulations, and are prime locations for using the GPZ 8000™ to its best abilities.

When this happens, it may be worth trying a Normal Ground Type, as these provide the greatest depth and sensitivity when ground conditions allow.

User Shortcut



An action can be assigned to the user shortcut button, giving you convenient access to a shortcut of your choice.

The shortcuts that can be assigned are:

 **Tracking Ground Balance On/Off**
Turns Automatic Ground Tracking On or Off.

 **Echo Sonic Pro™ On/Off**
Turns Echo Sonic Pro™ On or Off.

 **Favorite Ground Type**
Changes between your favorite Ground Type and the last used Ground Type.



User Shortcut in the Settings Menu and Status Bar

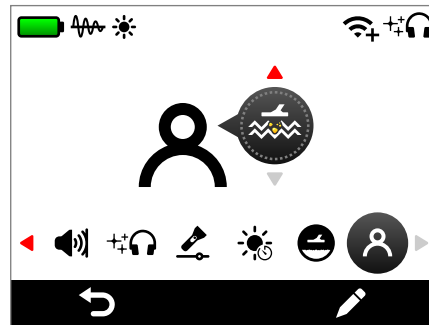
ASSIGN THE USER SHORTCUT

1. Navigate to:  **Settings** >  **User Shortcut**.
2. Press  /  to choose the shortcut.
3. Press [ **back**] to return to the Detect Screen.

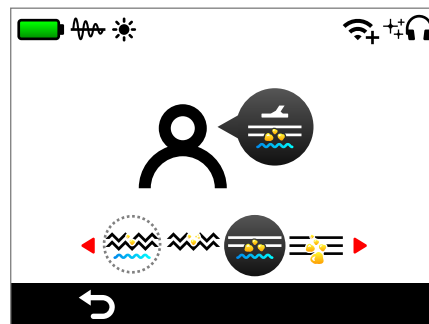
Change the Favorite Ground Type

By default, **Difficult High Yield** is assigned as the favorite Ground Type. You can change the favorite Ground Type via the Settings Menu:

1. Navigate to:  **Settings** >  **User Shortcut**.
2. Press  /  to select Favorite Ground Type.

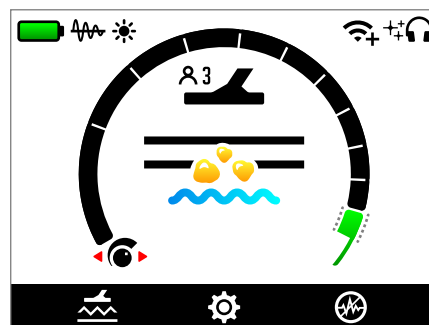


3. Press the right soft key [ **edit**].
4. Press  /  to navigate to the Ground Type to assign it as the favorite.



5. Press [ **back**] twice to return to the Detect Screen.

When **Favorite Ground Type** is assigned to the user shortcut button, the user shortcut icon is displayed next to the favorited Ground Type in the Ground Type Menu, and on the Detect Screen.



Operation

Automatic Operation

The GPZ 8000™ is engineered for easy operation without loss of performance. GeoZVT™ technology provides maximum depth by monitoring your detecting activity and environment. It automatically tracks and removes unwanted ground response, so minimal user input is required.

Regardless of experience level or personal preference, setting up the detector for gold detection remains the same. Gold is typically found in geologically ancient environments that contain high levels of mineralization and magnetic soil content. These conditions create strong ground responses that can interfere with target signals.

The very ground characteristics that host gold (mineralization, magnetic soils, hot rocks, and conductive salts) are the same factors the detector must actively manage. If they are not correctly controlled, these ground responses can mask or misread gold signals.

Optimizing the detector for the environment is not optional; it is fundamental to successful gold detection.

AUTOMATIC OPERATION PROCEDURE

The procedure below is a fail-safe way to begin detecting in a high-sensitivity automatic mode. Once complete, the GPZ 8000™ will automatically maximize sensitivity while minimizing noise, so you can concentrate on finding gold.

For this procedure, starting with the Z18 coil is recommended.

START ►

1. Factory reset the detector

Factory reset the detector — see [Factory Reset on page 65](#). Starting with the detector in its default state gives you a clean starting point from which you can tune the audio and detecting settings. In default state, Difficult Deep is the Ground Type, and Auto sensitivity is selected.

Note, you will need to reconnect the WM 14 — see [Pair the WM 14 to the Detector on page 20](#).

2. Quick-Trak

Do the Quick-Trak Ground Balance procedure [\[page 53\]](#) to remove ground noise. This is to help you accurately adjust the detector audio in the next step.

3. Adjust the detector audio

Using a test target for this step is helpful.

Adjust the **Volume** [\[page 33\]](#) and **Threshold Volume** [\[page 37\]](#) settings; these should be set so that you can clearly hear targets over normal environmental noise.

The goal is not to completely eliminate chatter/busy audio, as you could miss targets, but rather to find the sweet-spot where targets are clearly audible against the threshold tone.

Next, choose the **Threshold Pitch** [\[page 38\]](#) that is comfortable for your hearing. Use a test target to see how clearly you will hear targets against the threshold tone. If you find that the test target is easy to differentiate against the threshold tone, but is too loud or too quiet, adjust the **Volume Limit** [\[page 39\]](#) setting until the targets sound clear and comfortable.

4. Identify and manage environmental noise

Begin detecting over the ground and listen to the audio. If the audio is noisy, identify the source and apply the recommended solution — see [Identifying the Source of Noise on page 54](#).

5. Begin detecting

Every 5 to 10 minutes throughout your detecting session, raise and lower the coil above the ground a couple of times from 10 to 100 mm (½ to 4 in). This ensures that the detector is thoroughly ground balanced and operating at maximum sensitivity. In environments with more ground noise, repeat this process more frequently.

- **If the conditions are very quiet**, increase sensitivity from Auto to Auto +.
- **If the detector becomes noisy**, perform the [Auto Noise Cancel Procedure \[page 52\]](#).

6. Progressing to manual settings

The automatic procedure is designed to require minimal user input and quickly establish stable operation. For this reason, it defaults to Difficult Deep, which provides the highest level of ground suppression to ensure reliable performance across a wide range of conditions.

Once you are confident using the detector, you may wish to use the manual sensitivity settings. When adjusted correctly, manual sensitivity can improve your ability to detect gold by reducing the likelihood that target signals are treated as ground noise and filtered out, which can sometimes happen when using the automatic settings.

See the following sections for more information:

- [Manual Operation Procedure \[page 49\]](#)
- [Coil and Ground Type Optimization \[page 50\]](#)
- [Adjust Sensitivity Manually \[page 28\]](#)
- [Manual vs. Auto Sensitivity \[page 29\]](#)

Manual Operation

MANUAL OPERATION PROCEDURE

This procedure is the most thorough way to set all essential detecting functions to optimize the GPZ 8000™ for deep soils and large nuggets — exactly the type of ground where the GPZ 8000™ excels.

Conduct this procedure over target-free ground.

START ►

1. Check your headphones

This procedure uses Echo Sonic Pro™, so use the supplied headphones making sure that the **L** (left) and **R** (right) symbols inside the headband are on the correct side.

2. Factory reset

Factory reset the detector — see [Factory Reset on page 65](#). Starting with the detector in its default state gives you a clean starting point from which you can tune the audio and detecting settings.

If using the WM 14 (headphones required), you will need to re-pair it to the detector — see [Pair the WM 14 to the Detector on page 20](#).

3. Quick-Trak

Do the Quick-Trak Ground Balance procedure [\[page 53\]](#) to remove ground noise. This is to help you accurately adjust the detector audio in the next step.

You'll need to repeat Quick-Trak periodically throughout this procedure and during your detecting session.

4. Adjust the detector audio

Using a test target for this step is helpful.

Adjust the **Volume** [\[page 33\]](#) and **Threshold Volume** [\[page 37\]](#) settings; these should be set so that you can clearly hear targets over normal environmental noise.

The goal is not to completely eliminate chatter/busy audio, as you could miss targets, but rather to find the sweet-spot where targets are clearly audible against the threshold tone.

Next, choose the **Threshold Pitch** [\[page 38\]](#) that is comfortable for your hearing. Use a test target to see how clearly you will hear targets against the threshold tone.

If you find that the test target is easy to differentiate against the threshold tone, but is too loud or too quiet, adjust the **Volume Limit** [\[page 39\]](#) setting until the targets sound clear and comfortable.

5. Optimize the coil and Ground Type

Use GeoZVT™ technology and Echo-Sonic Pro™ audio to select the right combination of coil and Ground Type for your conditions.

To help with this, there are three optimization procedures available. Follow the procedure that best matches your soil depth, target size, and noise conditions in the section: [Coil and Ground Type Optimization \(page 50\)](#).

6. Ground balance periodically

Every 5 to 10 minutes throughout your detecting session, raise and lower the coil above the ground a couple of times from 10 to 100 mm (½ to 4"). This ensures that the detector is thoroughly ground balanced and operating at maximum sensitivity. In environments with more ground noise, repeat this process more frequently.

7. Adapt to changing conditions

- **If the conditions are very quiet**, increase the sensitivity level; you can choose to use Auto +, or adjust it manually — see [Adjust Sensitivity Manually on page 28](#).
- **If the detector becomes noisy**, perform the [Auto Noise Cancel Procedure \(page 52\)](#).

Even after careful tuning of detector settings at the beginning of a session, adjustments may be needed to make sure you're getting the best performance possible as the ground or surrounding environment changes. Therefore, be prepared to periodically repeat the procedures described in [Coil and Ground Type Optimization \(page 50\)](#), which may require you to switch back and forth between Ground Types and coils.

Coil and Ground Type Optimization

USING THE OPTIMUM COIL AND GROUND TYPE COMBINATION

With GeoZVT™ technology and Minelab's new concentric toroidal coils, all ground conditions can be effectively managed by selecting the right combination of coil and Ground Type.

Follow the recommended procedure depending on the goal of your detecting session:

- To prioritize maximum depth to find large, deep nuggets in deep soils — follow [Optimize for Depth](#) on page 50.
- To prioritize sensitivity and control to find smaller gold in shallow soil — follow [Optimize for Small Gold in Shallow Soils](#) on page 51.
- To prioritize EMI management to make otherwise undetectable locations detectable — follow [Optimize for High EMI and/or Conductivity](#) on page 51.

i Even if you suspect high EMI in your location, start with the Z18 or Z13 first. If high EMI is confirmed, *then* change to the Z17.

Step through the Ground Types in the orders shown while listening to the Echo-Sonic Pro™ Audio feedback. As soon as the ground response becomes stable and manageable, begin detecting using that Ground Type.

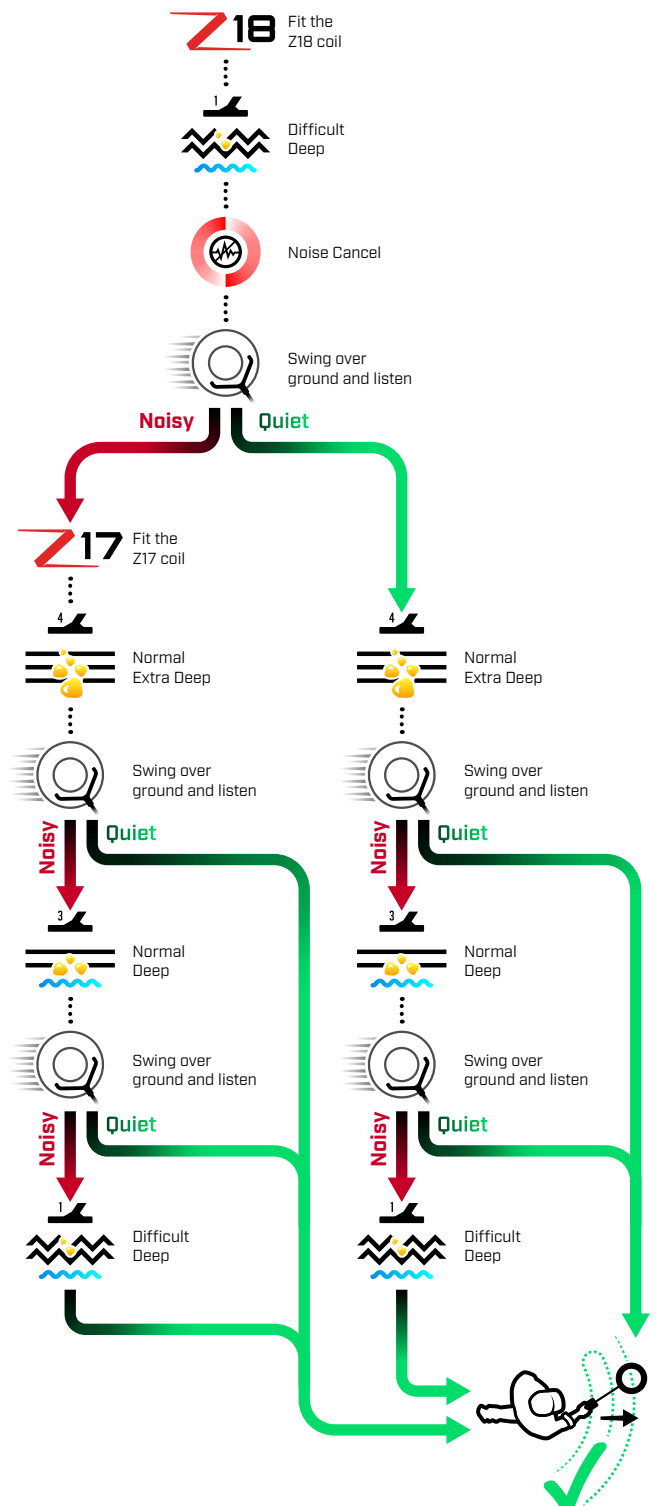
If (and only if) ground noise remains excessive, switch to the Z17 coil. It effectively manages high EMI and conductivity to allow you to detect in otherwise undetectable ground.

Before beginning these procedures, make sure Echo-Sonic Pro™ is enabled, you are using headphones, and you are wearing them around the right way ('L' on the left and 'R' on the right).

Optimize for Depth

Use this procedure when the soil is deep and/or you are hunting for large deep gold. It thoroughly investigates the ground and is an ideal place to start when detecting in a location with unknown soil depth and conditions.

i Repeat Quick-Trak (page 53) every time the Ground Type is changed throughout this procedure.

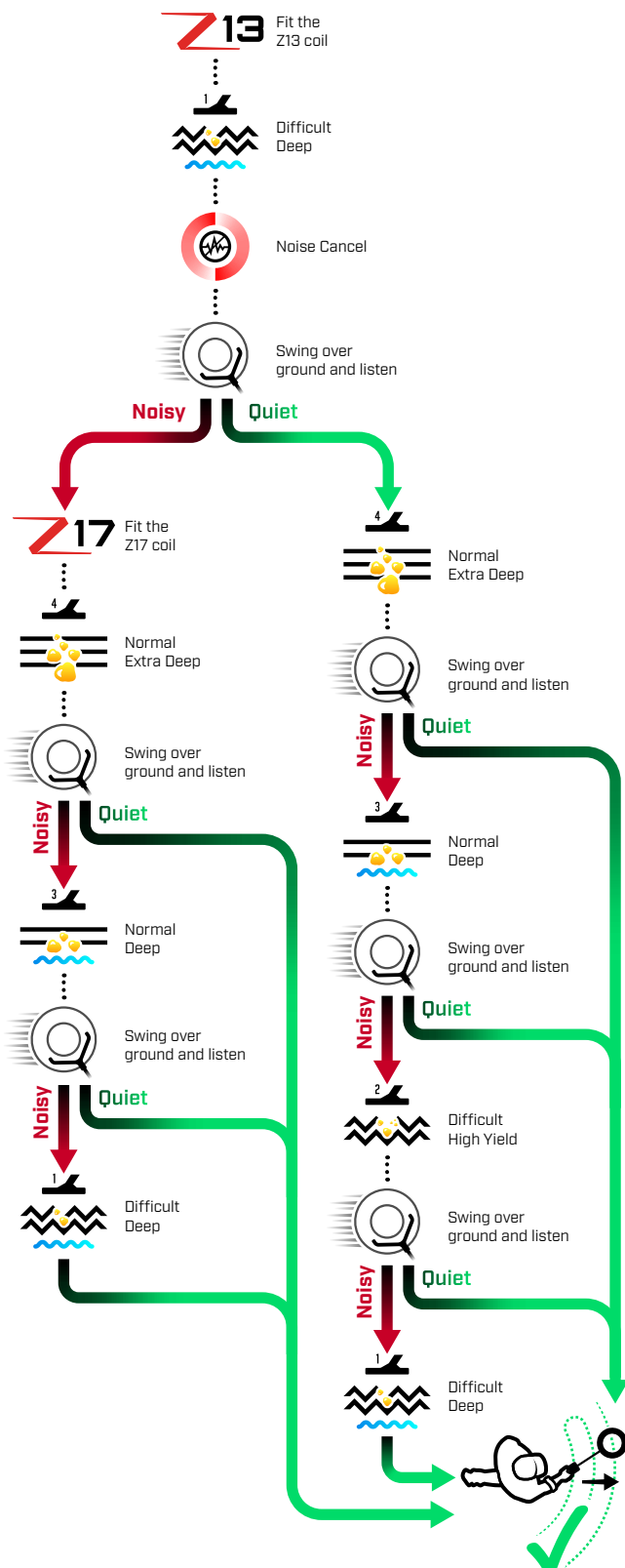


Coil and Ground Type Optimization *[continued]*

Optimize for Small Gold in Shallow Soils

Use this procedure when detecting in known shallow soils for small gold.

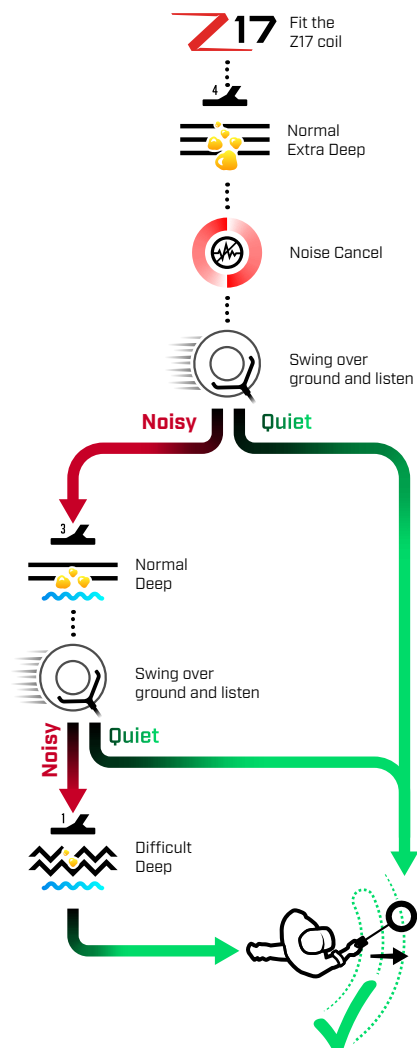
i Repeat Quick-Trak (page 53) every time the Ground Type is changed throughout this procedure.



Optimize for High EMI and/or Conductivity

Use this procedure when local conditions are extremely noisy due to conductivity and EMI.

i Repeat Quick-Trak (page 53) every time the Ground Type is changed throughout this procedure.



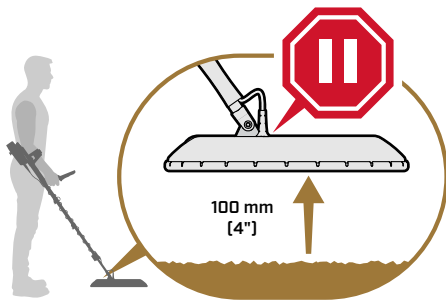
Noise Cancel

If audio responses become erratic due to EMI, perform a Noise Cancel to automatically select a quieter detecting channel.

Using the automatic Noise Cancel function is recommended to find the quietest detecting channel. If you would prefer to manually set the Noise Cancel channel — see [Manual Noise Cancel](#) on page 52.

AUTO NOISE CANCEL PROCEDURE

1. Hold the coil still approximately 100 mm [4"] above the ground and parallel to it.



2. Press the right soft key [ Noise Cancel].
3. The Auto Noise Cancel pop-up animation will display while Noise Cancel is in progress (approximately 45 seconds).

You can interrupt Auto Noise Cancel by pressing the right soft key [ Noise Cancel] again.



4. A confirmation tone indicates that Noise Cancel is complete.
5. Begin detecting.
If the detector is noisy when using the Z18 or Z13 coil, switch to the Z17 coil and repeat.
If the detector is still noisy and you are already using the Z17 coil, reduce the Sensitivity level.

MANUAL NOISE CANCEL

The Manual Noise Cancel setting in the Settings Menu allows you to listen to each channel so you can manually select the one with the least interference — see [Adjust Manual Noise Cancel](#) on page 36.

Ground Balance

Ground Balancing reduces or eliminates unwanted ground noise. The GPZ 8000™ features automatic ground tracking as well as manually initiated Ground Balance called Quick-Trak. It also has Ground Type settings for even greater Ground Balance control.

The GPZ 8000™ is constantly monitoring and tracking the ground in order to track and remove ground noise. The in-built automatic tracking is a reliable choice for most detecting conditions, however this section will guide you through the additional ground balancing options and when to use them.

To fully understand the ground balance process there are several things to consider:

GROUND BALANCE FACTORS

Upon Start-up

Shortly after the detector is powered on and the start-up process is complete, the detector will begin to rapidly track and cancel the ground response as the coil begins to move over the ground. Note this process will not start until coil motion is detected.

Ideally, turn the detector on over ground that does not contain any metal targets.

Automatic Tracking

If Tracking Ground Balance is enabled ([page 35](#)), the detector will continuously track to the ground and remove ground noise. Automatic tracking provides slow, steady, and reliable ground balancing for a seamless detecting experience.

Automatic tracking:

- Ground balances more slowly than Quick-Trak.
- Ideal for both new and experienced users.
- Tracks successfully to most ground conditions.
- Detector continuously tracks ground during detecting, but Quick-Trak may still be used to rebalance to changing or variable ground conditions.

Ground Type Setting

The Ground Type setting controls how much unwanted ground noise is removed from the audio response. Select the appropriate Ground Type for your location to ensure the underlying ground balance is optimized — see [Choosing the Right Ground Type on page 26](#).

Quick-Trak Ground Balance

You can manually initiate a rapid ground balance by performing the Quick-Trak Ground Balance procedure ([page 53](#)). This is required when moving between different detecting areas in order to manage any changes in ground conditions.

Quick-Trak Ground Balance:

- Is a manually initiated ground balance process for faster ground balancing than Automatic Tracking.
- Is used to ground balance to a localized area of ground, e.g. patches of extreme mineralization, hot rocks etc.

- Can be used in between digging and checking for a target, so that the target is not 'balanced out' accidentally.

Conductive Ground

In some circumstances the ground noise may be due to conductive ground effects. Conductivity is common in salty ground or in wet ground after a recent rain. In these instances, change the Ground Type to Normal Deep or Difficult Deep. If these do not resolve the noise and you have other coils, you can try changing first to the Z13 coil which handles conductivity slightly better than the Z18, followed by the Z17 coil, which excels at handling conductivity.

QUICK-TRAK GROUND BALANCE PROCEDURE

Quick-Trak Ground Balance rapidly recalibrates the detector when ground conditions change. While automatic tracking is effective for most detecting, it may be too slow in some situations. In these cases, do the following procedure:

1. Press and hold the Quick-Trak button — it must remain pressed throughout the Quick-Trak procedure.
2. Raise and lower the coil between 10 and 100 mm (½ and 4 in) above the ground to expose the coil to the full range of the ground — try to lower the coil as close and parallel to the ground as possible without hitting the ground.
3. Swing the coil from side-to-side once the ground noise has significantly reduced. This will capture any remaining ground signals for a thorough ground balance.
4. Once the ground noise is at a comfortable level or will not reduce any further, release the Quick-Trak button.

If there is still noise when the coil is passed over the ground, try detecting on a nearby location in case the noise is being caused by a target or metal object. Try performing Quick-Trak over a new patch of ground.

To further improve handling of ground noise, make sure you're using the best possible coil and Ground Type combination — see [Coil and Ground Type Optimization \(page 50\)](#).

Identifying the Source of Noise

Metal detectors experience background noise that can usually be attributed to three main sources: electromagnetic interference (EMI), ground noise, and conductive ground noise (conductivity). Identifying the source will help you to apply the correct solution.

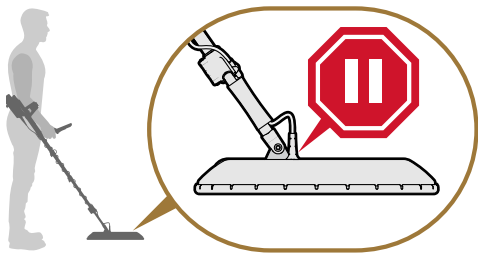
ELECTROMAGNETIC INTERFERENCE (EMI)

EMI can originate from many sources. The most obvious are power lines, electric fences, electric motors, transformers, radio transmitters, and cell (mobile) phones. Most EMI is generated by human activity, though distant lightning strikes are also a source.

To Identify EMI:

EMI is easy to identify because it is the only source of noise that is present when the coil is still. To verify that noise is due to EMI, change to a manual sensitivity setting, then hold the coil completely still and away from metal objects to see if the noise remains.

Note: In an automatic sensitivity setting, the detector will attempt to automatically compensate for noise from EMI, therefore identifying the source of EMI is best done using a manual sensitivity setting.



To Manage EMI:

- Perform Noise Cancel [\[page 52\]](#).
- Use the Z17 coil [\[page 11\]](#).

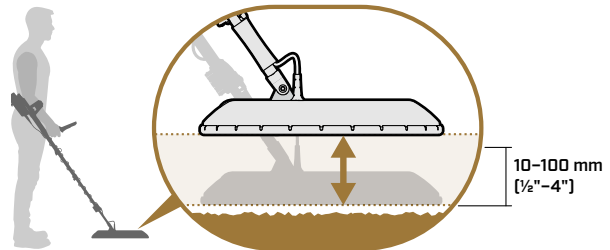
MINERALIZED GROUND NOISE

Ground noise is present when the metal detector interprets the ground as being a target due to its mineral content, which is categorized as the following:

- **Normal** — ground with low levels of mineralization.
- **Difficult** — ground that has medium to high levels of mineralization.
- **Variable** — ground that has varying levels of mineralization and/or conductivity from patch to patch.

To Identify Mineralization:

Raise and lower the coil above the ground a couple of times from 10 to 100 mm ($\frac{1}{2}$ " to 4"). If you hear signals that correlate with the coil movements, and the signals stop when the coil is stationary, then it is ground noise.



To Manage Mineralization:

- Perform a Ground Balance. To achieve the most thorough Ground Balance, follow the procedure listed in [Optimize for Depth on page 50](#). For faster but less thorough ground balance, follow the Quick-Trak Ground Balance procedure [\[page 53\]](#).
- In difficult or variable ground, change the Ground Type to Difficult Deep.

Identifying the Source of Noise *[continued]*

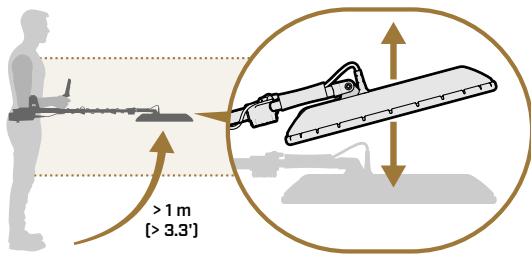
CONDUCTIVE GROUND NOISE

Conductive soils commonly occur when the soil contains salts. The effects of conductivity are most noticeable after rain when salts are dissolved in water and become conductive. Ground may be conductive (salty) even if the ground appears dry. If a detector is sensitive enough to detect small gold, then it is also likely to detect low levels of conductivity.

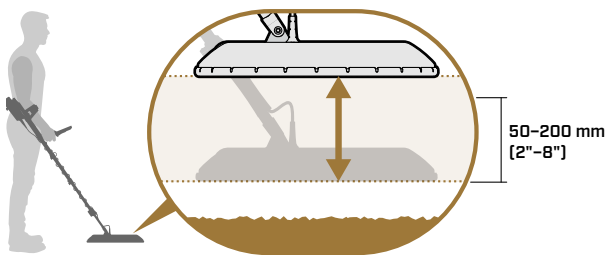
To Identify Conductivity:

There are two types of conductivity: shallow and deep. Though each type produces a similar 'moaning' sound, they can only be identified using slightly different techniques.

To verify that noise is due to shallow conductivity, hold the coil 1 m (3.3') above the ground. Tilt the coil so that it is parallel to the ground (i.e. horizontal) and then raise and lower the coil in the air between knee and shoulder height. If you hear noise that correlates to the coil movement, then noise is likely due to shallow conductivity in the ground.



To verify that noise is due to deep conductivity, press and hold the Quick-Trak button, then raise and lower the coil above the ground a couple of times from 50 to 200 mm (2" to 8"). If you hear noise that correlates to the coil movement, then noise is likely due to deep conductivity in the ground.



To Manage Conductivity:

- Change the Ground Type to Normal Deep or Difficult Deep.
- Use the Z17 coil.

Troubleshooting & Errors

General Troubleshooting

Detector does not turn On, or turns Off by itself

If the detector turns Off by itself accompanied by an error screen, see [Errors on page 58](#) to identify the next course of action.

1. Charge the battery.
 2. Check that the battery is fully latched onto the control box.
 3. The detector may be too hot. Allow it to cool down in a shaded area.
-

No sound — Wired Headphones connected to the detector

1. Check that the detector is On, and start-up has completed.
 2. Check that the headphone connector is fully plugged in to the detector.
 3. Check that the auxiliary cable is fully plugged into the headphones, and the bayonet end is fully locked.
 4. Check that volume is set to an audible level.
 5. Try using a different set of headphones.
-

No sound — Wired Headphones connected to the WM 14

1. Check that the detector is On, and start-up has completed.
 2. Check that the headphone connector is fully plugged in to the WM 14.
 3. Check that the auxiliary cable is fully plugged into the headphones, and the bayonet end is fully locked.
 4. Check that volume is set to an audible level.
 5. Unplug the headphones and confirm that the WM 14 speaker is audible.
 6. Try using a different set of headphones.
-

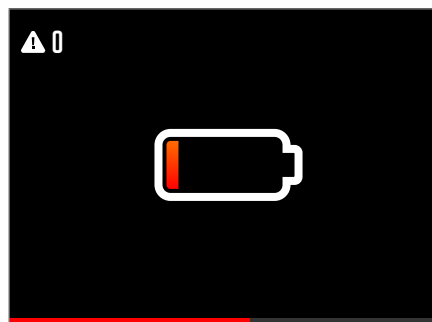
WM 14 Wireless Audio Module will not pair to detector

1. Power Off the WM 14 and then try to pair again — see [Pair the WM 14 to the Detector on page 20](#).
 2. Make sure the WM 14 is within 1 m (3.3') of the detector with no obstructions between the headphones and detector (including your own body).
 3. Move away from sources of interference such as cell phones (mobile phones).
 4. If there are many other wireless devices nearby, pairing may take longer. Move away from the area and try to pair again.
 5. Factory reset the WM 14 — see [Factory Reset / Unpair the WM 14 on page 21](#), then try to pair again.
-

Errors

If there is an Error, follow the recommended steps, in order, before contacting an authorized Minelab service center.

CRITICALLY LOW BATTERY ERROR

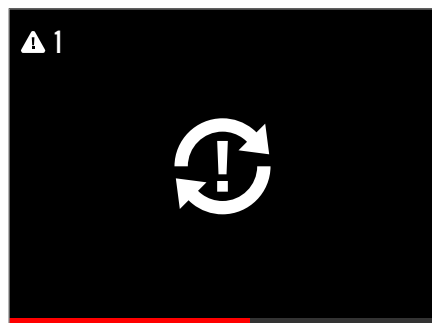


1. Recharge the battery.
2. Check that the USB charging source has a charging capacity of 2 A at 15 V.
3. Avoid using a USB extension cable when charging. Use the supplied USB charging cables instead.

SOFTWARE UPDATE ERROR

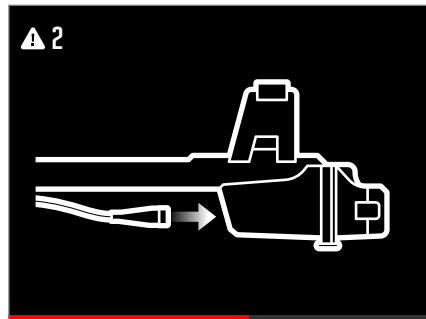
If there is an error while attempting to update the detector, the error screen is displayed for 5 seconds followed by a QR code before the detector automatically powers off.

Scan the QR code for further information, or contact an authorized Minelab service center.



COIL CONNECTION ERROR

If there is a coil error, the coil error screen will be displayed for 5 seconds before the detector automatically powers off.



1. Check that the coil connector is coupled properly to the interface on the front of the control box.
2. Check the coil cable for damage.
3. Check the coil for visible signs of damage.
4. Make sure the coil is an authentic Minelab coil.
5. Try another coil, if you have one available.
6. If the error persists, contact an authorized Minelab service center.

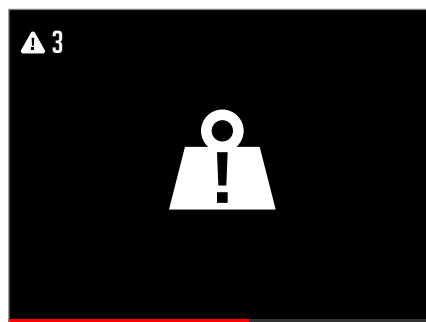
COIL OVERLOAD ERROR

Very large metal objects close to the coil may overload the detector electronics. If this occurs, the coil overload error screen will be displayed and an alarm tone will repeat until the coil is moved away from the source of the overload.



After 60 seconds of continuous coil overload, the coil overload error screen will be displayed for 5 seconds before the detector automatically powers off.

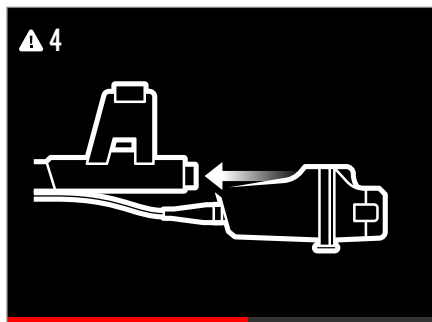
Overloading is not harmful to the electronics of the detector.



Errors *[continued]*

CONTROL BOX COMMUNICATIONS ERROR

If communication is lost between the control box and the control pod, the error screen is displayed for 5 seconds before the detector automatically powers off.



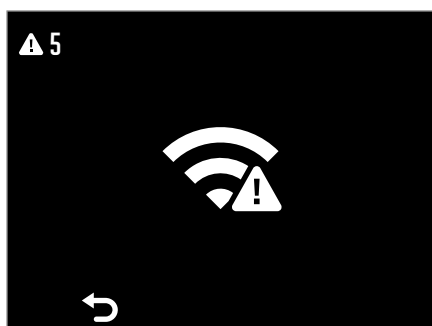
1. Check that the control box is firmly clipped onto the body of the detector.
2. Remove the control box from the detector and make sure the interfacing socket and connector pins are clean, then reassemble and see if the error remains.
3. If the error persists, contact an authorized Minelab service center.

WIRELESS AUDIO ERROR

If there is a wireless error, the error screen and a QR code are displayed. Scan the QR for further information, or contact an authorized Minelab service center.

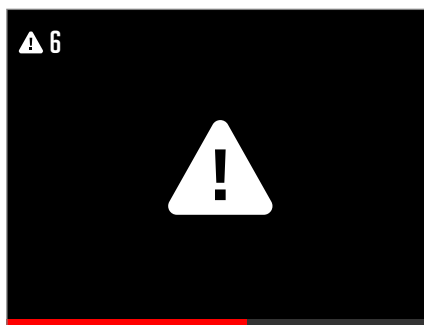
Press the left soft key (**↩ back**) to dismiss the message and continue detecting without wireless audio — use wired headphones connected to the detector instead.

The error message will be displayed at each start-up until the error is resolved.



SYSTEM ERROR

If there is a generic system error, the error screen and a QR code are displayed for 5 seconds before the detector automatically powers off. Scan the QR for further information, or contact an authorized Minelab service center.



Safety, Care & Maintenance

General Care and Safety

Operate and maintain your detector following the recommendations below to ensure its safe use and long life.

DISCLAIMER: The Minelab metal detector discussed in this instruction manual has been expressly designed and manufactured as a quality hobbyist metal detector and is recommended for use in gold prospecting and general metal detection in nonhazardous environments. This metal detector has not been designed for use as a mine detector or as a live munitions detection tool.

⚠ WARNING:

- Do not allow small children to play with the detector or accessories, small parts are a choking hazard.
- Risk of electric shock. Internal electronics may carry hazardous voltage or current. Do not open the device. There are no user-serviceable parts inside.

CAUTION:

- Risk of hearing discomfort or damage. Do not place the WM 14 speaker directly against your ears.
- Prolonged exposure to high volume may cause hearing discomfort or hearing damage. Adjust the volume to a comfortable level and take regular breaks during extended use.
- Pinch hazard. Keep fingers clear when adjusting the lower shaft or changing the coil. Pinching may occur between the lower shaft and coil assembly, or when closing the coil camlock.
- Do not leave the detector in excessive cold or heat longer than necessary. Covering it when not in use will help protect it. Avoid leaving it in a hot vehicle.
- Do not expose the detector to extreme temperature conditions. The storage temperature range is from -20°C to +80°C [-4°F to +176°F]. Avoid leaving it inside a vehicle parked in the sun on a hot day, as temperatures can reach extreme levels. If the detector has been exposed to high temperatures, allow it to cool down before attempting to power it On.
- Only charge rechargeable batteries and accessories according to the instructions provided.
- Only charge the detector battery and the WM 14 in ambient temperatures between 0°C and +40°C (32°F and +104°F).
- If the battery reaches temperatures of approximately 70°C (158°F), the internal protection circuit may activate and shut down the battery. When this occurs, the battery will stop powering the detector and will not operate until it is reset. Allow the battery to cool to normal ambient temperature, then charge it to reset the internal protection circuit.

NOTICE:

- Wash your hands before handling the detector after applying sunscreen or insect repellents.
- Never allow the detector to come into contact with gasoline/petrol or other petroleum-based liquids.

- Do not use any lubricants, sealants, or solvent-based or alcohol-based cleaners on any part of your detector. Even chemicals typically considered mild such as isopropyl alcohol or silicone lubricants can degrade material properties or the integrity of seals. To clean, use a slightly damp cloth with mild soap detergent.
- Never clean the display lens using solvents or alcohol-based cleaners. To clean the display lens, use a slightly damp cloth with mild soap detergent. Dry with a clean lint-free cloth to remove water-spots.
- Avoid getting sand and grit in any moving parts including the shafts, camlocks, yoke assembly, battery housing, and battery seal area. If sand and grit accumulate in these parts they should be carefully wiped down. The shafts, camlocks, and yoke assembly may be rinsed with fresh water and dried thoroughly.
- Ensure the coil cable is kept in good condition, free of strain, kinks, and tight bends.
- Do not use tools to tighten the coil connector to the control box, this will damage the control box. If the coil connector is not fitting easily, clean any dirt/grit away before trying again.
- Do not bring the detector or accessories into contact with sharp objects as this may cause scratches and damage.
- The display lens is made from quality optical plastic for clear viewing of the screen and is therefore prone to scratching or serious damage if not treated with due care.
- Do not expose accessories not listed as waterproof to liquid/moisture.
- The battery pack and interfacing parts on the detector are not rain-proof when disconnected from the detector — make sure they are kept dry when not connected to the detector.
- All GPZ 8000™ Z-Set coils are waterproof to < 1 m (3.3'), however the coil connector must not be submerged when not coupled to the coil connector socket.
- Disconnect the coil before packing/storing as luggage for transportation.
- Remove battery prior to air transportation.
- Take precautions when transporting or storing the detector. Although the detector is constructed from the highest quality materials and has undergone rigorous durability tests, the detector parts and display screen could become scratched or seriously damaged if not treated with due care.
- Keep strong magnets away from the coil and detector. Strong magnetic fields may affect performance.

Maintenance of Parts

Coil Maintenance

The skid plate is a sacrificial/replaceable part intended to protect the coil from damage. Replace the skid plate when it becomes excessively worn, but before it wears through in any place.

Control Box Stand Maintenance

The stand is a sacrificial/replaceable part intended to protect the control box from damage. Replace the Stand when it becomes excessively worn, but before it wears through in any place.

Tightening the Camlocks

The plastic parts of the camlock stretch slightly during normal use and may need adjusting periodically (every few months of regular use). Adjust the camlocks to reduce the tension prior to storing the detector for a month or longer.

1. Open the camlock.



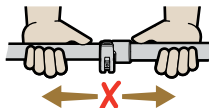
2. Gently tighten the thumbscrew in small increments.



3. Close the camlock.



4. Check after adjustment by applying normal force to the shafts.



5. Repeat until the shafts do not collapse easily under normal force.

NOTICE: Do not over-tighten the thumbscrew as this may damage the Camlock parts.

Detector Battery Care & Maintenance

Lithium-ion battery performance may degrade if unused for long periods of time. Fully charge the battery at least once every 3 to 4 months to prevent this from occurring.

Even with correct care and maintenance, lithium-ion battery performance reduces over time with normal use. Therefore the battery may need to be replaced every few years. Replacement and spare batteries are available to purchase separately.

NOTICE: Do not apply any chemicals including O-ring lubricant, grease, or silicone grease to the battery seal as this will damage it.

After Beach/Saltwater Detecting

Sand is abrasive, and salt can corrode metal parts of the detector over time. Following the listed advice is essential to avoid damage to parts of your detector.

Removing Sand From the Detector

Immediately after detecting at the beach or in saltwater, rinse sand off of the detector with fresh water. Avoid wiping the detector to remove sand as this may cause the sand to scratch the detector. Open the camlocks and flush with clean fresh water.

Detector Headphone Socket Maintenance

If the detector's headphone socket is submerged during detecting (with either the headphones connected, or with the waterproof-cap in place), make sure that the area around the socket is dry and free of sand/mud before disconnecting the headphones or removing the waterproof dust cap.

If any sand/mud accidentally gets inside the headphone socket, flush it gently with fresh water before drying it thoroughly.

WM 14 Care and Maintenance

- Keep the headphone socket clean and dry. Always replace the dust cap when not in use.
- Do not connect any headphones if the headphone socket is damp or wet.
- Before charging, make sure the charging interface is clean, dry and free of debris and salt residue.
- Do not clean the WM 14 with chemicals — wipe with a damp cloth or use soapy water if needed.
- The WM 14 contains an internal lithium battery — only dispose of the product in accordance with local regulations.
- Do not charge the battery in temperatures outside of the charging temperature range (0°C to 40°C/ 32°F to 104°F).
- Do not poke sharp objects into the WM 14's speaker grille to clean it, this will damage the speaker and compromise the rainproof sealing.

Specifications & Additional Information

Specifications

GPZ 8000™ DETECTOR

Ground Types	Difficult Deep Difficult High Yield Normal Deep Normal Extra Deep
Ground Balance	Auto Manual (Quick-Trak)
Noise Cancel	Auto (4096 channels) Manual (128 channels)
Sensitivity	Manual (levels 1–10) Auto (level 11) Auto + (level 12)
Display Backlight	Off Low Medium High
Flashlight (Dual-LED)	Off Low Medium High
Volume	1 to 17
Threshold Volume	0 (Off) to 15
Threshold Pitch	1 to 10
Volume Limit	1 to 10
Audio Modes	Echo Sonic Pro™ high-fidelity detecting audio Mono detecting audio
Length (with Z18 coil)	Extended: 1770 mm (697.6") Collapsed: 1020 mm (401.6")
Weight (with Z18 coil)	2.78 kg (6.1 lb)
Display	Color LCD (3.5")
Coil Compatibility	Z18 – 18" round concentric Z17 – 17" round concentric Z13 – 13" round concentric
Audio Output	Wired 3.5 mm (1/8") headphones Minelab proprietary low-latency wireless audio
Supplied Headphones	Sennheiser® HD 505 wired 3.5 mm (1/8") headphones
Wireless Audio Module Compatibility	WM 14 (IP 67)
Supplied Battery	Rechargeable Lithium-ion battery 5833 mAh
Battery Runtime (approximate)	10 hours
Battery Charge Time (approximate)	4 hours
Waterproof – Detector & coil	IP 67 rated — submersible up to 1 m (3.3') for up to 30 minutes
Operating Frequency	2 to 50 kHz
Operating Temperature Range	-10°C to +50°C (+14°F to +122°F)
Storage Temperature Range	-20°C to 70°C (-4°F to 158°F)
Key Technologies	GeoZVT™ Echo Sonic Pro™ (ESP™) Z-Set concentric toroidal coils Low-latency wireless audio

WM 14 WIRELESS AUDIO MODULE

Battery	Internal rechargeable lithium-ion battery 950 mAh
Battery Runtime	8 hours (approximately)
Battery Charge Time	3 hours (approximately)
Audio Output	Wired 3.5 mm (1/8") headphones Minelab proprietary low-latency wireless
Waterproof	IP67 rated — submersible up to 1 m (3.3') for up to 30 minutes
Operating Frequency	2.4 to 2.5 GHz
Inbuilt Speaker	Yes

Equipment may vary according to the model ordered. Minelab reserves the right to respond to ongoing technical progress by introducing changes in design, equipment and technical features at any time. For the most up-to-date specifications, visit www.minelab.com

Default Settings

General Settings

	Ground Type	Difficult Deep
	Sensitivity	Auto
	Volume	13
	Backlight	High
	Flashlight	Off
	Wireless	Off

Settings Menu

	Tracking Ground Balance	On
	Manual Noise Cancel	Auto
	Threshold Volume	6
	Threshold Pitch	5
	Volume Limit	5
	Echo Sonic Pro™ audio	On
	Flashlight Brightness	Medium
	Backlight Timeout	20 seconds
	Mineralization Level On/Off	Off
	User Shortcut	Tracking Ground Balance On/Off

FACTORY RESET

Factory reset returns all detector settings to their default states.

1. Turn the detector Off (⏻).
2. Press and hold the power button (⏻) for approximately 12 seconds, continuing to hold while the splash screens are displayed, until there is a confirmation tone and the factory reset confirmation screen is displayed.
3. Release the button.

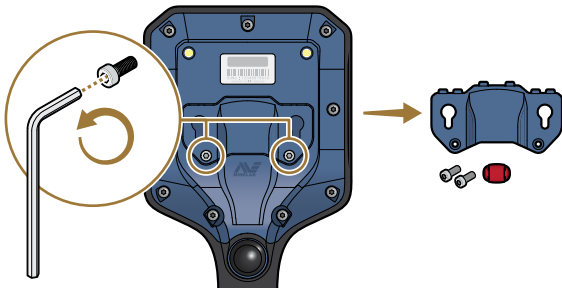


Software Updates

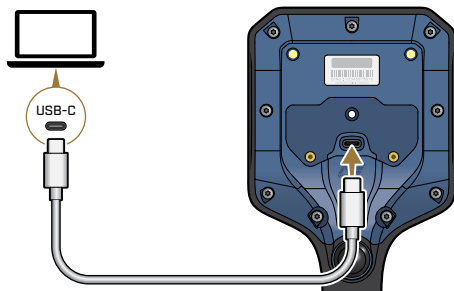
The GPZ 8000™ detector and WM 14 Wireless Audio Module contain software that can be updated via your PC and the supplied USB-C charging cables, which have data transfer capability. Visit www.minelab.com for the most up-to-date software and updating instructions.

Connecting GPZ 8000™ to a PC

1. Remove the two hex-head screws on the back of the control pod using a 2.5 mm (3/32") hex key. Remove the cover and USB bung, and set it aside with the screws.



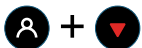
2. Connect a supplied USB-C cable to the exposed USB-C port, then connect the other end to a USB-C port on your PC.



Remember to refit the USB bung and cover, and make sure both screws are gently tightened.

View Detector Software Info

1. Long-press the user shortcut button and down arrow button at the same time.



2. Press ◀/▶ to navigate to the Info screen (i) to view software information including software [S/W] and hardware [H/W] versions, the Manufacturer Identification Codes [MIDC], and the wireless version.

Compliance

Refer to the supplied "Instructions and Safety Information" leaflet for detailed regulatory information.

View Product Compliance Information

1. Long-press the user shortcut button and down arrow button at the same time.



2. Press ◀/▶ to navigate to the Compliance screen (E) to view compliance information.

To view the most up-to-date product compliance information, press ◀/▶ to navigate to Compliance QR (QR icon), then scan the QR code (www.minelab.com/compliance).

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